Drivers and barriers for implementing and sustaining engagement in Urban Agriculture in low-SES neighborhoods

Heemskerk, Hilde H.M.

Award date:
2025

Graduation project

Drivers and barriers for implementing and sustaining engagement in Urban Agriculture in low-SES neighborhoodss

2023-2024

Full Name	Student ID	Study
Hilde Heemskerk	1271644	Urban Systems & Real Estate

Eindhoven, July 6, 2024

Intentionally left blank

Colophon

Title
Drivers and barriers for implementing and sustaining engagement in Urban Agriculture in low-SES neighborhoods

Kewords: Urban Agriculture, Explorative interviews, Co-creation, Theory of Planned Behavior, Drivers and Barriers, Qualitative content analysis, Borda count method, Majority method

General

Graduation Program:	Architecture, Building and Planning (ABP)
Study track:	Urban Systems & Real Estate (USRE)
Period:	The academic year 2023 - 2024
Course code:	7Z45M0
Study Load:	45 ECTS
Date:	11-07-2024

Student

Name:	Hilde Heemskerk
Student Number:	1271644
Mail:	h.h.m.heemskerk@student.tue.nl / hilde_heemskerk@live.nl
Phone:	+31 (0)6 20 15 29 74

Graduation Committee Architecture, Building and Planning (USRE)

Chariman:	Prof. dr. ir. Astrid Kemperman
First supervisor:	dr. ir. Robert van Dongen
Second supervisor	ir. Mayke van Dinter

Eindhoven, July 6, 2024

Intentionally left blank

Preface

Dear reader,

In front of you lies my graduation project, the (almost) last step of my educational career. This career started many years ago, beginning with 1,5 year of Biomedical Engineering, where the tiny molecules and hormones scared me. So, I decided to switch to "Bouwkunde", a more tangible and visible field of study. This was the right decision because I enjoyed the more creative and social courses. However, I should be honest and say that I did not finish my bachelor's and master's degree, without "slag of stoot", I considered quitting but pushed through multiple times.

Approaching my graduation project, I aimed to find a topic closely related to something I'm passionate about. I enjoy gardening and cooking for other people, so the topic of Urban Agriculture really spoke to me. The societal approach of the initiatives, the potential to contribute to a healthier lifestyle, spreading the love for gardening, and spreading knowledge about healthy food and cooking, are all subjects which I feel passionate about.

This thesis would not have been possible without the guidance and support of my supervisors. I want to thank Robert van Dongen, Mayke van Dinter and Astrid Kemperman for their support, enthusiasm, feedback, and motivational speeches given over the past months. I want to highlight a specific moment, during my first meeting with Robert, which I shared with many friends. I was really nervous, so I started chatting about 100 different subjects in 45 minutes, told Robert he was sitting in the 'wrong' corner of his office, and ended with the question: Do you like sweet or savory food? I'm still wondering which impression I made.

I want to thank my friends for the unforgettable time at the TU/e, including my sorority Iknoria, where I made friends who unconditionally supported me, helped me, gave me motivational speeches, and who are always there for me. Furthermore, I want to thank my family, who nourished my passion for gardening and food, and my sister who supported me with her academic knowledge. Lastly, I want to thank Tim for his support and great study corner.

Hilde
Amsterdam, July 2024

Summary

The current spatial layout of cities separates urban residents from their food supply, contributing to various environmental challenges, such as greenhouse gas emissions, biodiversity loss, and water pollution. Combined with increased loneliness, rising health concerns, and a lack of understanding of the risks associated with unhealthy lifestyle choices, this creates significant problems. To mitigate the environmental impact of food production, reduce transportation, and promote a healthier, more social, and sustainable lifestyle, it is crucial to reconnect people geographically and mentally with their food production.

This study explores Urban Agriculture (UA) as a viable solution, defined as the growing, processing, and distribution of food within and on the fringe of urban areas, using and reusing natural resources and urban wastes for multiple purposes. Existing literature highlights the benefits of UA on physical and mental health, environmental sustainability, and social cohesion, particularly in low-socioeconomic status neighborhoods. Despite these proven benefits, UA implementation and the longevity of initiatives remain limited.

This study aims to identify the drivers and barriers to implementing and sustaining engagement with UA initiatives from the perspectives of relevant stakeholders. The findings can contribute to developing targeted and nuanced solutions to overcome barriers and strengthen drivers. The Theory of Planned Behavior (TPB) suggests that behavior results from the intention to engage in specific actions, influenced by three key factors and background factors. This framework is applied to compare the drivers and barriers to UA implementation and engagement. It is assumed that when there are more drivers, or if the drivers are stronger than the barriers, it is more likely that there is an intention to implement initiatives and sustain engagement with initiatives

The implementation process of UA includes initiation, approval, creation, and design of initiatives. Sustaining engagement involves maintaining the initiatives and their surroundings, supporting participants' interests, managing resources, sharing knowledge, and promoting community involvement.

The primary stakeholders will be defined as the residents of the low-SES neighborhoods. The perspective of this stakeholder group is assumed to be more focused on the short-term personal stakes, interests, and benefits, during the process of development, implementation, and engagement in UA initiatives. The secondary stakeholder will be defined as professionals, due to their knowledge of UA, experience with UA, ideas about UA, and influence on the development process of UA initiatives. The perspective of the secondary stakeholders is assumed to be focused more on the long-term effect, the larger influence scale, and future perspectives of UA initiatives.

The first phase of this research involves conducting explorative interviews with secondary stakeholders to identify the perceived drivers and barriers. The semi-structured interviews will use an interview guide to guide the interviews. Ten participants are selected using the distinguished criteria. The interviews are analyzed using qualitative content analysis, resulting in codes, concepts, and themes.

The insights from secondary stakeholders guide the second phase, which involves primary stakeholders through co-creation sessions. These sessions validate and compare the preliminary insights, focusing on the perceived importance of the identified concepts

and themes. Two low-SES neighborhoods, Tivoli and Doornakkers-Oost, were selected using criteria such as the percentage of unemployed individuals in a neighborhood, the percentage of low-income in a neighborhood, and the percentage of inhabitants with a low educational level in a neighborhood. The co-creation sessions will include two main activities, a flag line activity to rank the concepts, and bulletin boards to identify driving and barrier themes. The data is analyzed using the Borda count method, and the majority method.

The results of this research can contribute to developing targeted and nuanced solutions, to weaken and overcome barriers, and strengthen drivers for the implementation to and sustaining engagement of UA initiatives. The concept Initiative is perceived as the most significant barrier, the results also show the relevance of focusing on the concepts Social and Health which are perceived as important by both stakeholder groups. The concept Environment is perceived as important by the secondary, but not by the primary stakeholders. Future research should focus on using these important concepts and barriers to overcome the barriers and strengthen the drivers, so people will have a stronger intention which leads to the implementation of and sustaining engagement with UA initiatives.

Furthermore, the research highlights several key drivers and barriers specific to UA initiatives. Drivers such as perceived health benefits, social interaction opportunities, and environmental improvements motivate stakeholders to engage with UA projects. Conversely, barriers including lack of knowledge, limited financial resources, and insufficient institutional support hinder the implementation and sustainability of these initiatives. Addressing these barriers through targeted interventions, such as educational workshops, financial incentives, and robust policy frameworks, can significantly improve the success rates of UA projects. By focusing on the unique needs and motivations of each group, and by fostering a collaborative environment, UA projects can effectively contribute to healthier, more sustainable, and socially cohesive urban communities.

However, the research identified several limitations, such as the relatively small sample size of participants for both phases of the research, which may not fully capture the diversity of perspectives and experiences within the broader population. The geographical concentration of the study could limit the generalizability of the study. Furthermore, potential selection bias may occur due to snowball sampling. Results of the co-creation sessions may differ due to the use of different research assistants.

Overall, the research highlights the importance of understanding the distinct perspectives of different stakeholder groups in the implementation and sustaining of UA initiatives. The findings suggest that targeted strategies addressing both drivers and barriers can enhance the effectiveness and sustainability of UA projects, particularly in low-SES neighborhoods. When residents are actively involved in the design and decision-making processes, there is a greater sense of ownership and commitment to the initiatives. This participatory approach not only enhances the relevance and acceptability of UA projects but also ensures their long-term viability by building a strong community foundation. This research provides a valuable framework for future efforts aimed at promoting urban agriculture and enhancing its impact, particularly in low-SES neighborhoods.

Abstract

The current spatial layout of cities separates urban residents from their food supply, contributing to various environmental challenges, such as greenhouse gas emissions, biodiversity loss, and water pollution. Combined with increased loneliness in cities, rising health concerns, and a lack of understanding of the risks associated with unhealthy lifestyle choices, this creates a big problem. To reduce the environmental impact of food production, reduce transportation, to promote a healthier, and more social and sustainable lifestyle, it is important to geographically and mentally reconnect people with their food production. This study explores Urban Agriculture (UA) as a viable solution. Existing literature highlights the benefits UA, on a physical, mental health, environmental, and societal level, particularly in low-socioeconomic status neighborhoods. Even though many of the benefits of UA, are proven academically, the implementation of UA is lacking, and longevity of the initiatives is not guaranteed.

This study aims to identify the drivers and barriers to the implementation of and sustaining engagement with UA of the relevant stakeholders. Accompanied by the Theory of Planned Behaviour, which is used as the conceptual framework to explain human intention and behavior. It is assumed that when there are more drivers, or if the drivers are stronger than the barriers, it is more likely that there is an intention to implement initiatives and sustain engagement with initiatives.

The first phase of this research consists of conducting explorative interviews with the secondary stakeholders, referred to as professionals, and aims to cover the broad landscape of information about UA and identify the drivers and barriers known by these stakeholders. The interviews are analyzed using Qualitative content analysis, resulting in codes, concepts, and themes. The insights from secondary stakeholders guide the second phase, involving primary stakeholders, which are residents of the low-SES neighborhoods. The insights from secondary stakeholders guide the second phase, which involves primary stakeholders through co-creation sessions. These sessions validate and compare the preliminary insights, focusing on the perceived importance of the identified concepts and themes.

The results of this research can contribute to developing targeted and nuanced solutions, to weaken and overcome barriers, and strengthen drivers for the implementation to and sustaining engagement of UA initiatives. The concept Initiative is perceived as the most significant barrier, the results also show the relevance of focusing on the concepts Social and Health which are perceived as important by both stakeholder groups. The concept Environment is perceived as important by the secondary, but not by the primary stakeholders. Future research should focus on using these important concepts and barriers to overcome the barriers and strengthen the drivers, so people will have a stronger intention which leads to implementation of and sustaining engagement with UA initiatives.

Kewords: Urban Agriculture, Explorative interviews, Co-creation, Theory of Planned Behavior, Drivers and Barriers, Qualitative content analysis, Borda count method, Majority method

Contents

List of Figures

List of Tables

1 Introduction

Today's layout of cities, with agriculture located in the rural areas, spatially separates urban residents from their food supply (National-geographic, n.d.). Moreover Goldstein et al. (2016), highlight that the transportation of food to cities, and the packaging of food are key contributors to greenhouse gas emissions. Additionally, this contributes to biodiversity loss, water pollution, land-use change, non-renewable resource exhaustion, and other environmental challenges on a global scale. Together with increased loneliness (Buecker et al., 2021), and rising health concerns worldwide this separation creates a big challenge. The health concerns include the rapidly increasing rates of obesity in developed countries (Johnson et al., 2021), and lack in understanding the risks associated with lifestyle choices (Devaux et al., 2011). To reduce the environmental impact of food production, transportation, and to promote a healthier more social, and sustainable lifestyle, it is important to geographically and mentally reconnect people with their food production.

According to Sun et al. (2020), there has been a significant growth of the urban population in the last few decades. As of 2018, 4.2 billion people live in urban areas, 7.6 billion people overall. By 2050, the global population will reach 9.7 billion, and 68% of the population, around 6.6 billion people, will live in urban areas (fig. 1). This urban growth will lead to densification and expansion of cities. Additionally, this will result in a rise in the negative effects which are caused by the separation of urban residents and their food supply, unless the planning of cities changes.

Figure 1: *Growth of urban population urbanization*

A viable solution would be the integration of food production in cities: Urban Agriculture (UA). Until recent years, Urban Agriculture was overlooked in urban planning, but its popularity has risen for urban planners, municipalities, and residents of cities. In this study combining various definitions used in literature, the following definition is derived: "Urban Agriculture is the growing, processing, and distribution of food, at every scale, both within and on the fringe of urban areas, using and reusing natural resources and urban wastes, for multiple purposes" (fig. 2)(Mougeot, 2006, Duchemin et al., 2009, Mukherji, 2009, Brown et al., 2003, Butler et al., 2002, Lovell, 2010, & Smit et al., n.d.).

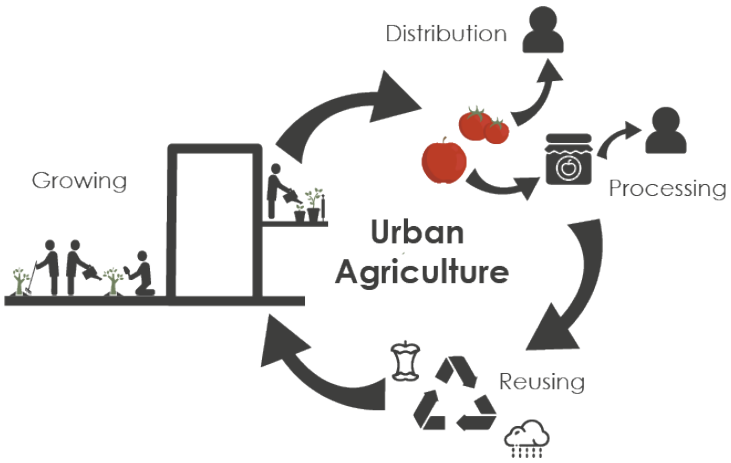


Figure 2: *Visualization of the definition Urban Agriculture used in this study*

When looking at UA, the environmental issues created by the separation of food and the city could be mitigated by e.g. reducing the farm-to-fork distance, and the amount of package material used (Goldstein et al., 2016), creating more urban green spaces and reducing waste by e.g. composting (Duchemin et al., 2009). Goldstein et al. (2016) further discuss the environmental benefits on a city scale. UA can contribute to the increase of biodiversity in cities, it can reduce the urban heat island effect, and improve stormwater runoff by retaining water in the substrate. Additionally, UA can improve the substrate, which helps with filtering pollutants from the water. This will result in an improvement in the quality, stability, and organic carbon content of the soil. Lastly, it can improve the air quality of cities by filtration of airborne pollution by plant matter (Goldstein et al., 2016).

Next to the environmental benefits, UA-related activities offer physical and Societal benefits. Urban farming is a recommended form of physical activity (Armstrong, 2000), which can help with preventing obesity and improving muscle mass (Audate et al., 2019). Additionally, UA provides the opportunity to cultivate fresh and high-quality local food, without the use of pesticides. Fruits, vegetables, and tree nuts, all high in nutrients, vitamins, and minerals, are the main products of urban agriculture and are essential for a balanced diet (Grebitus et al., 2020). Next to this UA related activities can improve psychological well-being. UA can reduce stress levels (Audate et al., 2019), create a sense of belonging in a community (Duchemin et al., 2009), as well as social inclusion in a community (Tamer, 2022). Additionally, it offers increased social interaction and networks, leisure activity, and the enjoyment of nature and open spaces (Armstrong, 2000). Lastly, there are societal benefits of UA which include, the beautification of the neighborhood. Next to this, UA encourages added participation of residents in, and shared maintenance of the neighborhood. It offers a feeling of being part of a society, it improves food accessibility (Duchemin et al., 2009, it offers opportunities for nutritional education, and can help with financial savings (Armstrong, 2000). The above-mentioned benefits summarized in figure 3, ensure urban planners', municipalities' and residents' rise of interest for Urban Agriculture.

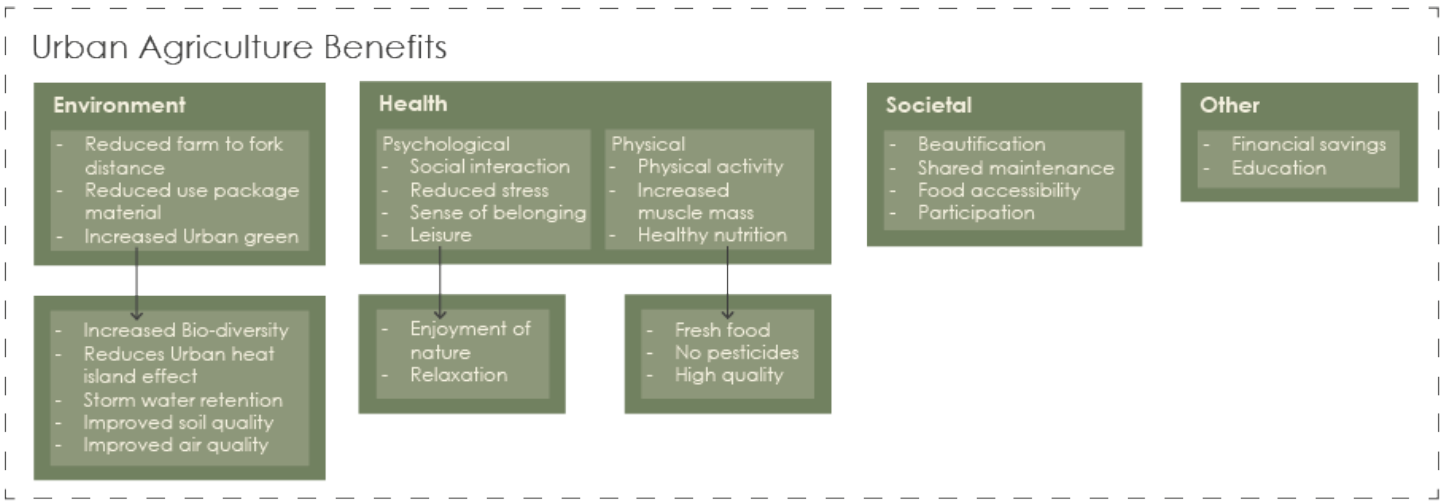


Figure 3: *Benefits of Urban Agriculture*

Even though many of the benefits of UA are proven academically, the implementation of UA is lacking behind. In the Netherlands, most UA initiatives can be found in Amsterdam. Amsterdam has around 150 documented UA initiatives of different scales, which can be found distributed throughout the city (Amsterdam and de Haan, n.d.). These initiatives consist of food forests, allotment gardens, vertical farms, community gardens, roof gardens, etc. Despite the numerous benefits of UA, comparable initiatives and the documentation of these are lacking when examining other large cities.

To comprehend the reason behind the insufficient implementation of UA initiatives, it is essential to identify the drivers and barriers affecting the implementation and engagement. According to Zhang and He (2021), drivers encompass the benefits and have the potential to influence positive and pro-environmental behavior, which can lead to the adoption of initiatives. Conversely, barriers hinder implementation and encompass challenges such as governmental policies, costs, time, available space, individual willingness, and lack of knowledge (Lovell, 2010). Due to the lack of implementation, it is assumed that there are currently more or stronger barriers to overcome than drivers.

Additionally, after the implementation phase, sustaining engagement with UA initiatives is crucial to ensure their longevity. Sustained engagement involves ongoing participation and fostering a sense of ownership among participants. Including participants of the UA initiatives in the design and decision-making process helps create this sense of ownership. Additionally, to effectively meet the needs of citizens, and to create innovative public innovations it is important to co-create with the participants of the UA initiatives. This will increase the success rate and longevity of new initiatives and contributes to more efficient and effective outcomes n (Ståhlbröst et al., 2018).

It is essential to consider specific contexts and scopes because each neighborhood often faces unique challenges. Different neighborhoods could derive significant, context-specific advantages from UA initiatives. Particularly, low-socioeconomic status (low-SES) neighborhoods would benefit largely from UA initiatives and show high potential in terms of current challenges for implementing UA. Sarsani (2011) refers to SES as the position of an individual or group in a society, which is determined by wealth, occupation, in-

come, educational attainment, and social class. In this study the following criteria will be used to define low-SES neighborhoods, the percentage of unemployed individuals in a neighborhood, the percentage of low-income in a neighborhood, and the percentage of inhabitants with a low-educational level in a neighborhood. Citizens in low-SES neighborhoods have generally less money to spend on healthy food, which is 18-29% more expensive (Springmann et al., 2021). A study shows that residents of low-SES neighborhoods would gain greater health benefits if they lived in a greener neighborhood, relative to other populations (Rigolon et al., 2021). Finally, when looking at the ten biggest cities in the Netherlands, 48,3% of the gardens are paved (Sloven, 2019), and especially low-SES neighborhoods are characterized by a low percentage of green in the area and a high percentage of small, paved gardens and squares, which indicates a potential in the use of space for UA.

The benefits of UA differ for the various scales of UA. In this study, the focus will be on small-scale Urban Agriculture, such as balcony gardens, community plots, communal crates and other local projects. This scale makes it possible for all residents, to participate with UA. Small-scale UA can be located in public and private areas, including pots on a private balcony growing vegetables or herbs, and public initiatives like the wooden crates of Amstergaard on public terrain, displayed in figure 4a, 4b, and 4c ("Ruijtergaard – Stichting Amstergaard", n.d.).

(a) Crates of Ruitergaard *(b) Volunteers working together* *(c) Lay-out of a crate*

Figure 4: *Images show the UA initiative "Ruitergaard" of "Stichting Astergaard", with the hexagonal creates ("Ruijtergaard – Stichting Amstergaard", n.d.)*

Drivers and barriers may depend on multiple stakeholders with different perspectives and insights which should be identified (Zhang and He, 2021). According to Cavallini et al. (2016), all stakeholders have different levels of knowledge, interests, roles, and agendas in the process of development. Therefore it is essential to involve all different stakeholders in the development of initiatives in existing urban areas. In this research, the stakeholders will be divided into two stakeholder groups. The primary stakeholders will encompass the residents of the low-SES neighborhoods, with their individual needs, and own knowledge base. The secondary stakeholder group will include professionals, with knowledge of UA, experience with UA, and influence on the development or implementation of UA. Both stakeholder groups are assumed to be part of both the implementation process and sustained engagement in UA initiatives. However, the primary stakeholder group is expected to be more important and relevant in sustaining of engagement with the initiative, while the secondary stakeholder group is assumed to be more involved in the implementation phase.

To conclude, a gap exists in understanding the drivers and barriers that hinder the implementation and sustaining of engagement in UA initiatives. In this study, the focus will be on identifying the drivers and barriers that influence the successful implementation of and engagement with Urban Agriculture within low-SES neighborhoods, leading to the research question:

"What are the drivers and barriers to implementing and creating engagement with Urban Agriculture in neighborhoods with a low-socioeconomic status?"

This report is structured to provide a comprehensive analysis of urban agriculture (UA) initiatives, particularly in low-socioeconomic status (low-SES) neighborhoods. Following the introduction, Chapter 2 investigates the current knowledge of UA through a literature review, presenting theoretical frameworks, and existing research. Chapter 3 outlines the research methodology, including the research model, conceptual model, and data collection techniques. Chapter 4 elaborates on the explorative interview phase, detailing the structuring, data collection, and analysis technique, and will present the findings. This chapter highlights the key drivers and barriers of the identified secondary stakeholders. Chapter 5 discusses the co-creation sessions, including the set-up of the data collection, analysis techniques, and will present the findings. It also highlights the key drivers and barriers of the identified primary stakeholders and the limitations of this phase. Finally, Chapter 6 concludes the report with a summary of the insight and recommendations for future research.

2 Current knowledge on Urban Agriculture

This chapter will focus on relevant information, to give context to the concept of Urban Agriculture. This includes the definition of UA, the history of UA, current challenges regarding the food system in the Netherlands, stakeholders involved with UA the creation of intention and behavior, and a case study of Urban Agriculture cases. This will give a clear overview of the needed information and sets a starting point for the remaining part of this research.

2.1 Definition Urban Agriculture

In this study a composed definition will be used for Urban Agriculture (UA), this definition will be derived from different papers which define and use the term in various ways. For the definition, the terms Urban Agriculture and Urban farming will be combined, due to their consistent overlap.

The most common activities described as being part of UA are the production or growing, processing, and distribution of edible products such as crops and trees (Mougeot, 2006, Duchemin et al., 2009, Mukherji, 2009, Brown et al., 2003, Butler et al., 2002, & Smit et al., n.d.))

Some of the definitions also include the raising of livestock (Mougeot, 2006, Duchemin et al., 2009), or animal husbandry as activity (Brown et al., 2003, Mukherji, 2009 and Smit et al., n.d.) Raising livestock needs a lot of space, therefore it will be excluded during this study, to ensure even the people without a lot of spaces can participate.

The purpose of the products which are yielded by UA differs per definition. Mougeot (2006) states that the produced food is directly for selling on the urban market, Duchemin et al. (2009) also mentions the commercialization of the products, and Mukherji (2009) includes street vendors for distribution of the food. Butler et al. (2002) defines the destination of the food for marketing and consumption. Furthermore, Lovell (2010) mentions the daily needs and preferences of urban residents as the destination, while Smit et al. (n.d.) includes marketing and the daily demand of consumers. In this research, the purpose of the products will exclude commercialization, marketing, and street vendors, because of the smaller available space and scale of the initiatives.

In some of the definitions, the scope of UA is stated, Mougeot (2006), Duchemin et al. (2009) and Smit et al. (n.d.) mention that UA takes place both within and on the fringe (periphery) of an urban area. Mukherji (2009) and Brown et al. (2003) mention in and around cities as a scope. Lastly, Lovell (2010) mentions UA specifically being within a city and is the only one giving a scale for the size of AU as being at multiple scales. Mougeot (2006) and UNDP (1996) also mention the reusing of natural resources and organic urban wastes, in urban agriculture. Butler et al. (2002) mentions some benefits generated by UA like, recreation, leisure, economic vitality, individual health and well-being, community health, landscape beautification, and environmental restoration and remediation. Some of these benefits are also mentioned by Mougeot (2006). Lastly Mukherji (2009) mentions all kinds of subcategories of UA: vegetable gardens, orchards, community gardens, school gardens, roof gardens, market gardens, urban farms, aquaculture, greenhouses, animal husbandry as well as urban farm stands.

Considering these definitions, this study will use the most general way of describing Urban Agriculture. Urban Agriculture is the growing, processing, and distribution of food, at every scale, both within and on the fringe of urban areas, and using and reusing natural resources and urban wastes, for multiple purposes.

2.2 History of Urban Agriculture

UA sounds like a relatively new phenomenon, which has made its appearance quite recently in Dutch urban planning. However, 'volkstuintjes' (allotment gardens) were already common in the 1900's. Additionally, agriculture has traditionally been prevalent in city planning. The placement and scale of cities have always been dependent on the ability to provide the residents of the city with enough food (De Muynck, 2011).

Two interesting historical concepts use the relation between city and agriculture to suggest models for the planning of cities. Von Thünen et al. (1966), describes the relationship between city and agriculture in his spatial-economical model with the factors, price of land, harvest yield, the shelf-life of food, and transportability. With these factors, he created a model with rings, where each ring had its own purpose, for fresh produce, wood production, grain production, livestock, etcetera.

Howard and Butlin (1899), introduced the term garden city. It suggested a spatial layout, which tried to combine the best of the city and agriculture. The model describes a central city with self-sufficient garden cities, which were connected by public transport. In between those connections, agriculture was located. In the garden cities, there was also enough space for the residents to produce their own food.

In recent years, the remains of these models are still visible as well as allotment gardens in the fringes of cities. However, for the allotment gardens you have to pay a yearly contribution, and there are long waiting lists (van Galen, 2022), which makes them less accessible for residents of low-SES neighborhoods. Additionally, the intended green areas are paved and used as car parking spaces.

2.3 Current state Urban Agriculture in the Netherlands

In the Netherlands, within the small amount of initiatives, there is a variety of sorts of initiatives. To create an overview of the diversity of current UA initiatives in the Netherlands, an analysis is performed. This analysis focuses on creating an overview of the goal, location, and initiators of UA initiatives. For the analysis Dutch initiatives are analyzed, using the information on their websites. This case study uses the four key factors derived from the study of Veen et al. (2010): Food or green, Location of the production, initiator, and whether it has a social approach.

First, the factor food or green is focused on the goal of the initiative, is it mostly focused on food production or is it focused on the greening of the city. Next, the factor location focuses on the location of the production is it located in the center of the city or the fringe of the city. The factor initiator is focused on, who initiated the project e.g., individuals, NGOs, neighborhood associations, or municipalities. Lastly the possible social approach of the initiative, this factor focuses on the societal goal besides the main goal of food production or greening (Veen et al., 2010).

For the analysis, 10 initiatives are analyzed, 5 from Eindhoven and 5 from Amsterdam. The initiatives of Eindhoven were selected based on the availability of complete information online. And the initiatives of Amsterdam are chosen to represent a variation of

different scales of initiatives. The initiatives are placed in a coordinate system (Fig. 5), this coordinate system is an elaborate version of the one used in the study of Veen et al. (2010). On the x-axis, the food production compared to the greening factor, and the amount of societal goal besides the main goal on the y-axis. Lastly, the color of the dot in the coordinate system indicates the location of the initiative, white in the center, and orange in the fringe of the city. The analysis can be found in Appendix A.

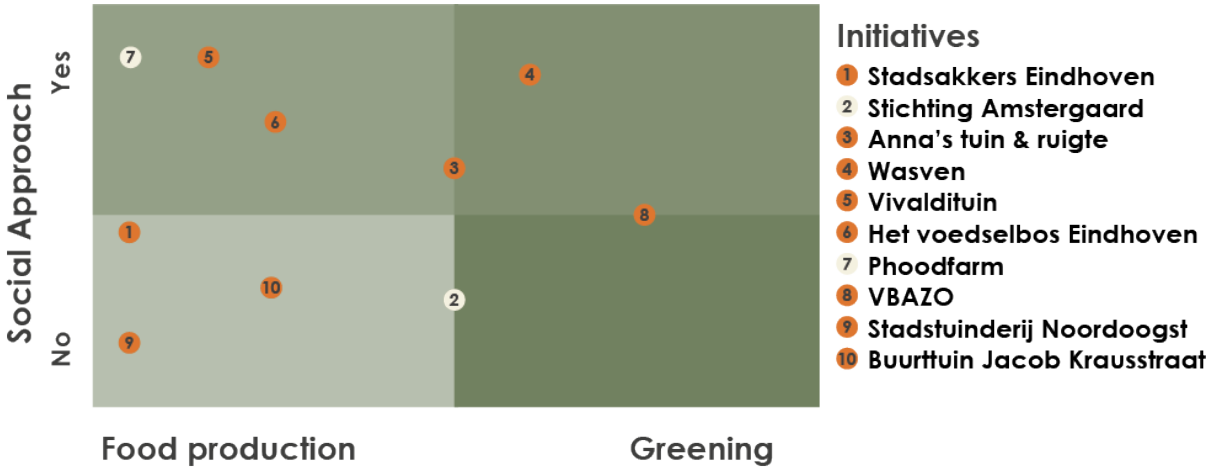


Figure 5: *Coordinate system with food production compared to the greening of cities on the x-axis, the amount of societal goal besides the main goal on the y-axis, a white dot indicates the initiative is located in the center and orange indicates the fringe of the city*

Figure 5 shows, that most of the initiatives are focused on food production and greening is often a side effect of the initiative. For most initiatives the societal factor is part of the original initiative, creating connection, offering working spots for people with a distance to the labor market, or providing daycare options, but for some initiatives, the social factor is a side effect.

2.4 Challenges of the current food system of the Netherlands

The current food system in the Netherlands has a lot of benefits, like an abundance of safe and affordable food. Nevertheless, on the long term, the way the current food system works has a strong negative effect on the sustainability of the future food supply, the ecological environment, and health (Hoes, 2018). This negative effect is the result of multiple challenges related to ecological sustainability, public health, import of produce and spoilage of produce.

When looking at ecological sustainability, for example, the CO2 emissions of the Netherlands, 14%, 26 Mton, of the total emissions are caused by agriculture (voor Ondernemend Nederland, 2016). Next to this, the ground-, surface-, and drinking water is polluted, by the leacking of chemicals in fertilizers such as nitrate (Fraters et al., 2016), and crop protection products (de Snoo, 2012). The soil in and around fields gets acidic which affects the natural soil life (de Snoo, 2012). Lastly, biodiversity is affected by the current food system, 614 plant-, and animal species disappeared since 1900 in the Netherlands (LNV, 2010).

Public health is mostly affected by challenges based on a lack of knowledge or awareness of the effect of (un)healthy food. Because of insecurities around (un)healthy food, more people are susceptible to incorrect advice about healthy foods and lifestyles (Polit, 2013). To illustrate, only between 1 to 14% (dependent on the age group) of the Dutch eat enough fruit and vegetables (WRR, 2014 p.72). Additionally, processed food has become more common during the past 50 years. Processed food contains a lot of sugar, fat, and salt (Vink et al., 2018; WRR, 2014). A poor diet and insufficient exercise can lead to metabolic syndrome, which is the rise in the possibility of suffering from heart and vascular diseases, and diabetes type 2. In the Netherlands, 34% of men, and 24% of women have metabolic syndrome (RIVM, 2012). Next to this, half of the Dutch population is too heavy, and 14% is obese. Yearly, 40.000 people get sick as a result of being overweight (WRR, 2014).

In the current food system, a lot of products will get thrown away by the consumer. The Dutch consumer throws away around 8% of their bought food. If this would be reduced, this would reduce the amount of food that should be produced or imported (Scheer et al., 2011)

When we look at the top 10 of the most environmentally impactful activities of the average Dutch person, the environmental impact of eating and drinking plant-based food is in the fifth spot (CBS, 2021). This is mainly caused by the import, processing and re-export. When looking at the biggest contributors to CO2 emissions, the order is first, fruit followed by meat, dairy, vegetables, and lastly fish.

Fruit and vegetables together are one of the larger contributors when looking at the travel distance of the food to the customer. One of the causes is the high volumes of fruit imported overseas, or continental. 82% of the consumed fruit in the Netherlands is imported of which around 45% of all imported fruit is transported overseas. the Dutch consumer expects to have all fruits and vegetables available at each moment of the year, so e.g. apples are imported from New Zealand if the Dutch apple season is over (Scheer et al., 2011). For all the consumed vegetables, 25% is transported overseas. In conclusion, such large travel distances lead to a large CO2 emission per Dutch consumer for their fruit and vegetable intake. A big factor is that consumers are not aware that some fruits and vegetables do not grow in the Dutch climate, like exotic-, and citrus fruit. Additionally, if consumers were more aware of their fruit and vegetable intake, e.g. where is it grown, how far it needs to travel, how it is packaged, and is it in season. This awareness could stimulate a positive view and perceived significance of homegrown vegetables.

2.5 Stakeholders of Urban Agriculture initiatives

The implementation process of UA initiatives, includes multiple stakeholders, with different perspectives. The implementation process of UA initiatives includes the following actions: the process of initiation, approval, implementation, creation, or designing of UA initiatives. UA initiatives are possibly located in public spaces managed by the municipality, companies, or privately. Additionally, initiatives could be started by residents of the neighborhoods, neighborhood initiatives, or other groups.

Sustaining engagement with UA initiatives includes the following factors: maintenance of the initiatives and their surroundings, maintenance of the participants and their interests, managing resources, sharing knowledge, promote ongoing community involvement. This includes multiple stakeholders, such as residents of the neighborhoods, the municipality, neighborhood initiatives, or other groups.

By combining the insights of these stakeholders, a comprehensive understanding and overview of the different perspectives of all factors influencing the UA initiatives can be made. The overview encompassing the drivers and barriers can help with highlighting discrepancies and commonalities in the perceptions of the stakeholders. Furthermore, initiators and participants of existing UA initiatives have experienced drivers and barriers during the implementation and continuation of UA initiatives. Additionally, it can help with developing targeted and nuanced solutions, tailored to address the unique concerns and motivations of specific stakeholders. To narrow the perceived gap in information, and come up with solutions, it is important to consider and distinguish the drivers and barriers of all involved stakeholders.

According to Cavallini et al. (2016), all stakeholders have different levels of knowledge, interests, roles, and agendas in the process of development. Therefore, it is essential to involve all different stakeholders in the development of initiatives in existing urban areas. The QHM approach clusters the protagonists of innovation-generating processes into four comprehensive categories, including Academia & research centers, Industry & business, Government & public sector, and Civil society. These categories will be used to shape two stakeholder groups.

The primary stakeholder group will encompass the category Civil society. In this research civil society will be defined as the residents of the low-SES neighborhoods. The perspective of this stakeholder group is assumed to be more focused on the short-term personal stakes, interests, and benefits. During the process of development, implementation, and engagement in UA initiatives.

The secondary stakeholder group will encompass the categories, Academia & research centers, Industry & business, Government & public sector. In this research, these categories will be defined as professionals, due to their knowledge of UA, experience with UA, ideas about UA, and influence on the development process of UA initiatives. The perspective of the secondary stakeholders is assumed to be focused more on the long-term effect, the larger influence scale, and future perspectives of UA initiatives.

2.6 Theory of planned behavior

This study focuses on distinguishing the drivers and barriers which stimulate, and restrain the implementation of UA, and the sustaining of engagement with UA. However, without an intention to implement UA initiatives or an intention to engage with UA initiatives, projects will not be set in motion or last, because people are not driven to perform certain behavior.

The theory of planned behavior (TPB) assumes that behavior results from the intention to engage in specific behavior. This behavior will result in implementation and engagement in Urban Agriculture Steg and De Groot, 2019). When the intention is stronger, it is more likely that you will engage in certain behavior. This intention is dependent on three factors: the attitude towards the behavior, subjective norms related to the behavior, and the perceived behavioral control. The relationship between these factors is

shown in Figure 6. Attitude focuses on the positive or negative evaluation of behavior, subjective norm focuses on the approval or disapproval of certain behavior, by important others, and perceived behavioral control focuses on the perceived ability to perform the behavior.

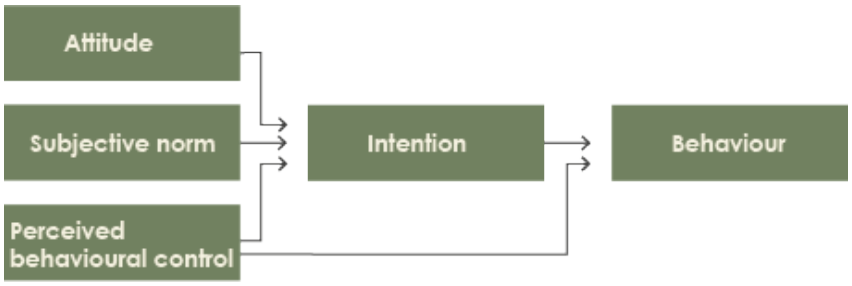


Figure 6: *Theory of planned behavior*

Attitude reflects the extent to which engaging in a behavior is evaluated positively or negatively, and based on beliefs about the likely costs and benefits of the behavior, weighted with perceived importance. The term behavioral beliefs is added by Ajzen (2020), which indicates the person's subjective probability that performing a behavior of interest will lead to a certain outcome or provide a certain experience. This experience can be the trigger of a positive or negative attitude towards the behavior.

Subjective norm is described by Steg and De Groot (2019) as the extent to which a person believes that important others would approve or disapprove of the behavior. This reflects the social costs and benefits of behavior and includes the beliefs about the expectations of relevant reference groups concerning the behavior, weighted by one's motivation to comply with these expectations.

The perceived behavioral control is the perceived ability to perform the behavior, depending on beliefs about the presence of factors that may facilitate or hinder that behavior. Ajzen (2020) adds the assumption that the perceived behavioral control is based on accessible control factors, such as required skills and abilities; availability or lack of time, money, and other resources like the availability of space.

Ajzen (2020) states that all other factors, such as socio-demographics, values, personality traits, personal norms, and intelligence influence behavior indirectly, and can be grouped into background factors. These background factors influence intention, and behavior via attitudes, subjective norms, and perceived behavioral control.

The attitude, subjective norm, perceived behavioral control, and background factors together are the drivers and barriers that will result in a certain intention and behavior. The balance between the drivers and barriers is important because when there are more hindrances, costs, and negative attitudes toward the behavior there will be a higher chance of having more barriers than drivers, which will not lead to an intention or behavior. However, when there is a positive attitude, low costs, and high benefits, the benefits can weigh more than the barriers, which leads to intention and behavior.

The interplay of attitude, subjective norm, perceived behavioral control, and background factors is crucial in shaping the intention and behavior of individuals towards UA. As an example, consider the attitude towards UA of an individual, when the perceived benefits of UA, e.g. cultivating, and eating fresh produce at home and reducing

grocery costs, weigh more than the ease of a ready-made meal then intention and behavior towards UA will be influenced positively.

When looking at the subjective norm, when an individual has a supportive community, that values sustainable living, this person is more likely to participate in UA. Furthermore, perceived behavioral control focuses on the ability of the individual to perform the behavior. So, when individuals believe they have the required skills, available (communal) space, and spare time, they are more likely to engage in UA.

Lastly, background factors like socio-demographics, personal norms, and education can influence UA behavior indirectly (Fig. 7). Individuals may have diverse backgrounds that contribute to unique perspectives, motivations, and knowledge. When looking at low-SES neighborhoods, where current access to green spaces might be limited, it is important to stimulate a positive attitude towards UA. Community initiatives, providing resources, education on (social) benefits, cultivation, and the importance of a healthy lifestyle can help overcome potential barriers influencing the subjective norm and perceived behavioral control. This can ultimately lead to the intention and behavior of active participation in Urban Agriculture.

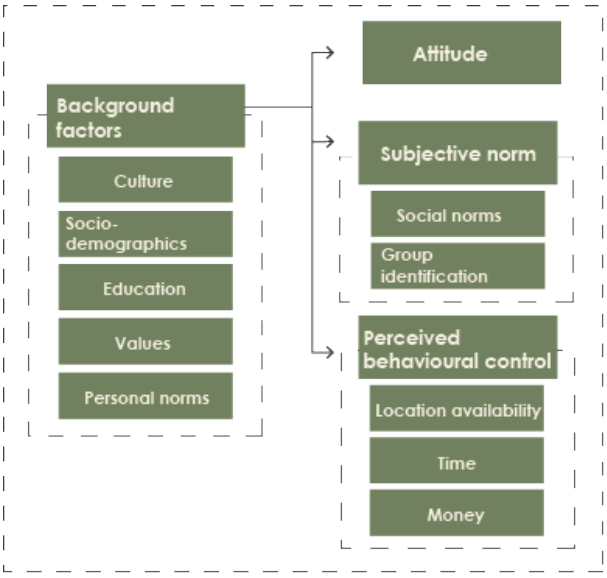


Figure 7: *Theory of planned behavior - Background factors*

In this study the TPB will not be proven, rather it will be used as a tool for structuring the drivers and barriers. The TPB explains how factors can influence the intentions and behavior of people. When drivers and barriers are distinguished during this research, the factors of the TPB may help with overcoming or weakening certain barriers, and strengthening the drivers.

The Theory of Planned Behaviour in relation to Drivers and Barriers

The TPB states that people's intentions and behavior depend on three main factors and background factors. Zhang and He (2021) state that drivers encompass factors including benefits and potential of initiatives. These drivers can influence positive intention, this positive intention can lead to the adoption of initiatives, and engagement with initiatives (behavior). They define barriers as elements that hinder implementation and engagement. So, both frameworks recognize the importance of underlying factors such as attitude,

subjective norm, perceived behavior control, background factors, benefits, drawbacks, and potential influence on human behavior. Therefore, Figure 7, shows that the TPB also encompasses drivers and barriers.

When the underlying factors such as attitude, etc. are predominantly positive it can be seen as a driver of intention and behavior, and when the underlying factors are predominantly negative it can be seen as a barrier to intention and behavior. In this research, the specific behavior is implementing UA initiatives and engaging with UA initiatives. Due to the lack of UA initiatives, it is assumed that there are currently more barriers and negative factors than drivers and positive factors for the behavior.

The current gap consists of a growing urban density, with increased health issues, paved gardens, and increased loneliness in cities. This combined with the missing knowledge and awareness about healthy food and lifestyle, and the environmental impact of food production, transportation, and packaging. Conversely, UA initiatives offer numerous benefits on a personal, environmental, and societal level. Therefore it is crucial for this research to focuses on identifying the drivers and barriers of the primary and secondary stakeholders. Which affects the implementation of UA initiatives and sustaining engagement with UA initiatives. Understanding which barriers should be overcome or weakened, and which drivers should be strengthened can contribute to developing targeted and nuanced solutions. Which can be tailored to address the unique concerns and motivations of specific stakeholders. This approach will help ensure that stakeholders have the intention to start successful initiatives and will act on this intention and stakeholders will sustain their engagement with the initiatives. The research will specifically focus on neighborhoods with a low-SES, due to the perceived potential.

3 Research Design

In this chapter, the research design is discussed, including the main research question, and division into sub-questions. Additionally, the research model is discussed which includes the conceptual model and an elaboration on the two research phases, which are divided into interviews with the secondary stakeholders, and co-creation sessions with the primary stakeholders.

3.1 Sub-questions

Urban Agriculture (UA) is a solution with numerous benefits and specific potential in low-SES neighborhoods. Despite the proven advantages, such as reducing stress, financial savings, and participation within the neighborhood there is a gap between the perceived potential and the lack of implementation and sustaining engagement with UA initiatives, of both stakeholder groups. This distinguished gap can be overcome using drivers, barriers, and the Theory of planned behavior (TPB), mentioned in chapter 2.6. Understanding current drivers and barriers using the TPB could contribute to overcoming, weakening, or strengthening them, with nuanced solutions that focus on the factors of TPB. This can help with tailoring the solutions to address the concerns and motivations of the stakeholders. This gap leads to the following main research question of this study:

"What are the drivers and barriers for implementing and sustaining engagement in Urban Agriculture in low-SES neighborhoods "

In Chapter 2 two stakeholder groups are distinguished, the primary stakeholders, residents of low-SES neighborhoods, and the secondary stakeholders, professionals. To distinguish, the drivers and barriers of the two stakeholder groups, the research is approached using the following sub-questions.

a) What are the drivers and barriers for implementation and sustaining engagement with UA according to professional stakeholders?

b) What are the drivers and barriers for implementation and sustaining engagement with UA according to residents of low-SES neighborhoods?

3.2 Research model

A research model is created to give a conceptual foundation and structure to the research, presented in Figure 8. The research model shows the order of steps during the research in the green box. Additionally, it shows the conceptual model, with the assumed effect of the drivers and barriers on the intention and behavior of people, on the right of the green box, based on the literature. First, literature research was performed in chapter 2. The literature review helps with establishing a solid and comprehensive foundation of existing knowledge on the topic of UA and distinguishing relevant frameworks. Next to this, it helped with identifying the gaps in the current knowledge, which was used to shape a relevant research question. Additionally, it gave the research context, by understanding the broader landscape of the issue, which can help with interpreting results.

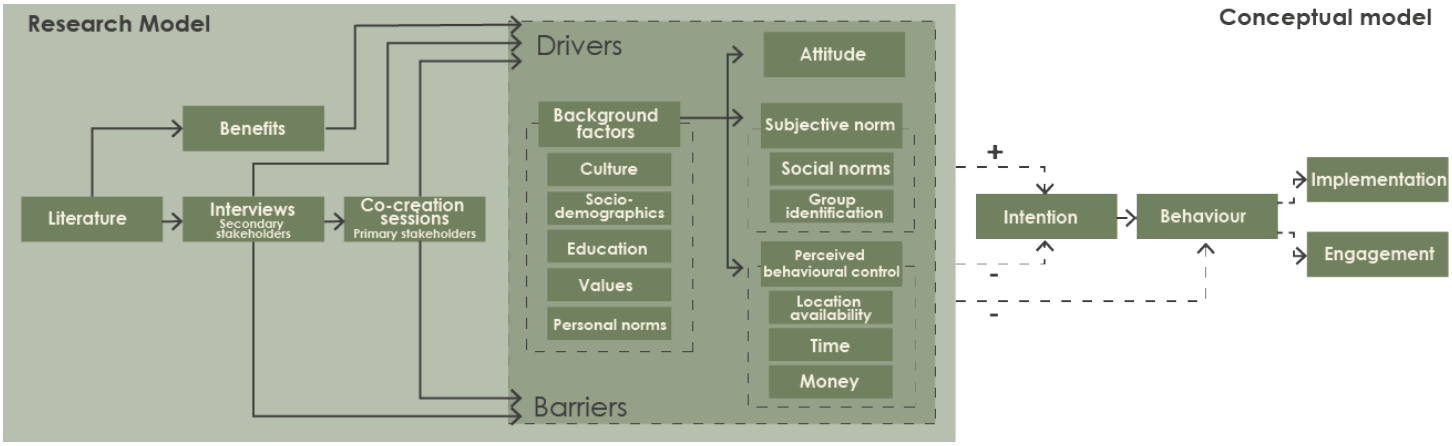


Figure 8: *Research model within the green box, with on the right side a transition to the conceptual model*

In the first phase of the research, explorative interviews are conducted with secondary stakeholders, to answer sub-question a. According to Habibipour et al. (2020), an explorative phase is designed to gain as much information as possible about the underlying factors. These interviews aim to cover the broad landscape of information about UA and identify the drivers and barriers known by these stakeholders, for both implementation and sustaining of engagement. This qualitative research approach, as described by Polit (2013), allows for a rich understanding of the study phenomenon. According to Jain (2021), interviews provide an interactive form of data collection, offering a personalized exchange of information, which is important for uncovering the personal perspectives, opinions, and experiences of the stakeholders. This initial phase helps identify preliminary insights, including key issues, themes, and concepts that act as drivers and barriers that might also be relevant to the primary stakeholder group. Professional stakeholders, have a broad understanding of UA, and offer a valuable and informed context to the subsequent research phase.

The preliminary insights gained from the secondary stakeholders are used to define the focus and structure of the second phase of the research, involving primary stakeholders. This approach ensures that the research is targeted and relevant. Additionally, it allows for the comparison and validation of preliminary insights with the perspectives of primary stakeholders, highlighting any gaps or discrepancies between the two groups.

In the second phase of the research, co-creation sessions are conducted with the primary stakeholders, to answer sub-question b. According to Habibipour et al. (2020), the co-creation phase is to develop concepts or rough prototypes of the solution, based on the preliminary insights from the exploration phase. In this research, no physical solution is created. However, the 'solution' will encompass comprehensive knowledge about the factors driving or obstructing the implementation and sustaining of the engagement.

Co-creation involves collaborative efforts between stakeholders to create a shared solution. During these sessions, the preliminary insights are evaluated and ranked on the perceived importance, and based on the opinions of the primary stakeholders. Additionally, the insights are assessed on whether or not they acknowledge and recognize these insights. This will result in an overview of the drivers and barriers from the perspective of the primary stakeholders.

Lastly, the dashed arrows show the assumed impact of the drivers and barriers on the intention and behavior. It is assumed, using the TPB, that if the drivers weigh more than the barriers this will positively influence the intention and will lead to behavior, which in this research is the implementation of UA or engaging in UA.

3.3 Explorative Interviews

The first phase of the research involves conducting explorative interviews. The goal of these interviews is to create an overview of the perceptions of secondary, professional stakeholders, regarding the drivers and barriers related to UA.

3.3.1 Semi-structured interviews

The interviews are semi-structured, enabling the collection of individual thoughts while allowing new ideas and perspectives to emerge (Adams, 2015). In semi-structured interviews, questions are pre-planned (Alsaawi, 2014), but the interviewees will have the opportunity to elaborate on and explain particular issues through open-ended and follow-up questions. This flexibility ensures a comprehensive exploration of the topic. To structure the interviews, a semi-structured interview guide is created, according to the five phases described by Kallio et al. (2016).

The layout of the interview will follow a funnel structure, starting with general questions aimed at understanding the stakeholder's experience with and knowledge of UA. Next, the questions will focus on the implementation and engagement with UA initiatives. Then, the questions will address the Theory of Planned Behaviour, focusing on the four factors it outlines. Lastly, there is an opportunity to ask one or more questions specific to each stakeholder.

3.3.2 Participant criteria

The semi-structured interviews are conducted with stakeholders who have professional interests in UA. Stakeholders are defined as any individual or group of people, organized or unorganized, with a common interest or stake in a particular issue or system (Grimble and Wellard, 1997). The objective of the interviews is to uncover underlying factors affecting the implementation and sustaining engagement with UA and create a broad landscape of information to provide context to the research. Additionally, the interviews will distinguish the understanding of and/or experience with UA of the stakeholders, and the knowledge or experience with policies affecting UA.

To ensure that participants of this first phase, including the secondary stakeholder group can help uncover the needed information, they must meet certain criteria. First, they should be included in the process of initiation, approval, implementation, creation, or design of UA initiatives. Next, they should have relevance to UA, either through their profession, involvement in related projects or neighborhoods, or expertise in the field. To ensure diverse perspectives, participants are selected from different sectors, such as public, private, and non-profit. Additionally, the participants should have varied roles including policy-makers, designers, practitioners, and aldermen.

These criteria lead to the secondary stakeholder groups including, policy-makers and urban planners of the municipality, initiators of UA projects, owners of UA projects, local businesses or NGOs focused on the environment or agriculture, researchers focused on healthy living, and social designers focused on implementation of initiatives in low-SES neighborhoods. During the interviews, participants are asked to recommend other

contacts who meet the research and stakeholder criteria and may be willing to participate, employing a snowball sampling method (Parker et al., 2019).

3.4 Co-creation Session

The second phase of the research involves co-creation sessions. The goal of these sessions is to test the preliminary insights gathered during the explorative interviews with the opinions and perspectives of residents in low-SES neighborhoods. Additionally, these sessions allow for the comparison and validation of preliminary insights with the perspectives of primary stakeholders, highlighting any gaps or discrepancies between the two groups.

As a side effect, including residents in the research increases the awareness and, likelihood of acceptance and success of the UA initiatives. This inclusion fosters a sense of participation and ownership among residents, as they feel involved in the design and decision-making process for a solution that should be part of their daily routine.

3.4.1 Method of selecting low-SES neighborhoods

The co-creation sessions are held in low-SES neighborhoods in Eindhoven. Sarsani (2011) refers to low-SES as the position of an individual or group in a society, which is determined by wealth, occupation, income, educational attainment, and social class.

In the Netherlands, there are multiple concepts which resemble low-SES neighborhoods. Which include the "Vogelaarswijken", including Dutch neighborhoods that have cumulative physical, social-economical, and social-cultural issues (Kamerstukken II 2006/07, 30995, nr.1, p. 2). Additionally, the "Grotensteden beleid" which employs 18 indicators to differentiate 140 focus neighborhoods in the Netherlands (Kamerstukken II 2006/07, 30995, nr.1, p. 2). Lastly, the "Leefbaarometer" assesses the livability of neighborhoods within the Netherlands on a small scale (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2019).

These three concepts have common elements in distinguishing low-SES neighborhoods. However, they were not suited to use for this research, due to missing elaborations on the methodologies for the distinguishing and selection of neighborhoods. Additionally, the weighing of used elements for distinguishing neighborhoods did not fit, and the methods are being considered outdated.

Therefore using common elements of these methods, a method is derived to compute the Socioeconomic status of neighborhoods in this research. According to Estabrooks et al. (2003), the percentage of unemployed individuals, per capita income, and percentage of the population below the poverty threshold should be used. Santiago et al. (2011) define the computation of SES as best conducted from parental education, occupational status, and family income. Lastly, Wasserman et al. (1998) state indicators of SES include education, employment, occupation, and income. This results in the common factors which are being used as criteria: the percentage of employment in a neighborhood, the average income of the households, and the average educational level of the inhabitants of a neighborhood. For this research, the scope is specifically low-SES neighborhoods. Therefore the criteria are specified as, the percentage of unemployed individuals in a neighborhood, the percentage of low-income in a neighborhood, and the percentage of inhabitants with a low-educational level in a neighborhood.

3.4.2 Selecting low-SES neighborhoods in Eindhoven

For selecting the neighborhoods in Eindhoven the database of 'Eindhoven in cijfers' is used. It contains (open) data of the municipality of Eindhoven (Eindhoven-in-cijfers, 2024). Table 1 presents the criteria, with related databases used for selecting the low-SES neighborhoods. The percentage of unemployed individuals in a neighborhood is represented by the dataset, "Geregistreerde werkzoekenden UWV zonder dienstverband t.o.v. het aantal 15 t/m 74 jarigen", which is the percentage of registered job seeking people between the age of 15/74, without current employment, 2017-2022 of UWV (Eindhoven-in-cijfers, 2024). For the percentage of low-income in the neighborhood the CBS dataset "Particuliere huishoudens met langdurig laag inkomen %", is used, which presents the percentage of private households with (long-term) low income from 2016-2022 is used. CBS defines the income of a household as lower than 9250 Euros per year and excludes students and other households with an incomplete annual income (Centraal Bureau voor de Statistiek, 2023). The percentage of inhabitants with a low educational level in a neighborhood is determined by the dataset "Laag opleidingsniveau %". This indicates the percentage of individuals with a low education level form 2019-2021 of CBS (Eindhoven-in-cijfers, 2024). Low educational level is defined as, education on the level of finished primary education, Vmbo, the first three years of Havo/Vwo, and assistant education, (Centraal Bureau voor de Statistiek, 2023).

Table 1: *Criteria and datasets used to select low-SES neighborhoods*

Low-SES criteria	**Database of 'Eindhoven in Cijfers'**	**Source**	**Available years in dataset**
% of unemployed individuals in a neighborhood	"Geregistreerde werkzoekenden UWV zonder dienstverband t.o.v. het aantal 15 t/m 74 jarigen"	(UWV, 2023)	2017 - 2022
% of low-income in a Neighborhood	"Particuliere huishoudens met langdurig laag inkomen%"	(UWV, 2023)	2016 - 2022
% of inhabitants with a low-educational in a neighborhood	"Laag opleidingsniveau %"	(CBS, 2023)	2019 - 2021

The selection process uses the 'Buurt' level as the scale for neighborhoods, resulting in 116 neighborhoods. Additionally, the year 2020 will be used, because this year contains the most neighborhoods for each dataset. The first selection criterion involves excluding neighborhoods with missing data, as each neighborhood should contain information for all three criteria. This ensures a fair comparison among neighborhoods, resulting in a list of 85 neighborhoods. The excluded neighborhoods are mostly, industrial areas, areas around Eindhoven airport, green areas, the High Tech Campus, and the University Campus. The next selection criteria involve sorting each dataset individually and selecting neighborhoods indicating the lowest score for each dataset. Neighborhoods with a high percentage across all three criteria strongly indicate b eing a low-SES neighborhood, shown in Table 2.

Table 2: *Neighborhood selection*

Neighborhood in 2020	**% of unemployed individuals**	**% Households with (long-term) low-income**	**% individuals with a low educational level**
Limbeek-zuid	13,0%	9,6%	
'T Hool	14,0%		
Doonrakkers-oost	15,0%	8,0%	41,7%
Tivoli	18,0%	11,0%	48,7%
Hemelrijken		9,8%	
Jagershoef			40,8%
Blaarthem			43,7%

Lastly, the neighborhoods that occur within the lowest-scoring neighborhoods in all three datasets, are considered the overall lowest-scoring neighborhoods on socio-economical status. For the research two neighborhoods are needed, so they can be compared. When sorting the datasets, it became evident that when the four lowest-scoring neighborhoods were analyzed, two neighborhoods were included in all three datasets. This is visualized in Figure 9, and results in the selection of the neighborhoods: Tivoli and Doornakkers-Oost. This method was repeated for the year 2021, which resulted in the same two neighborhoods being the lowest-scoring neighborhoods.

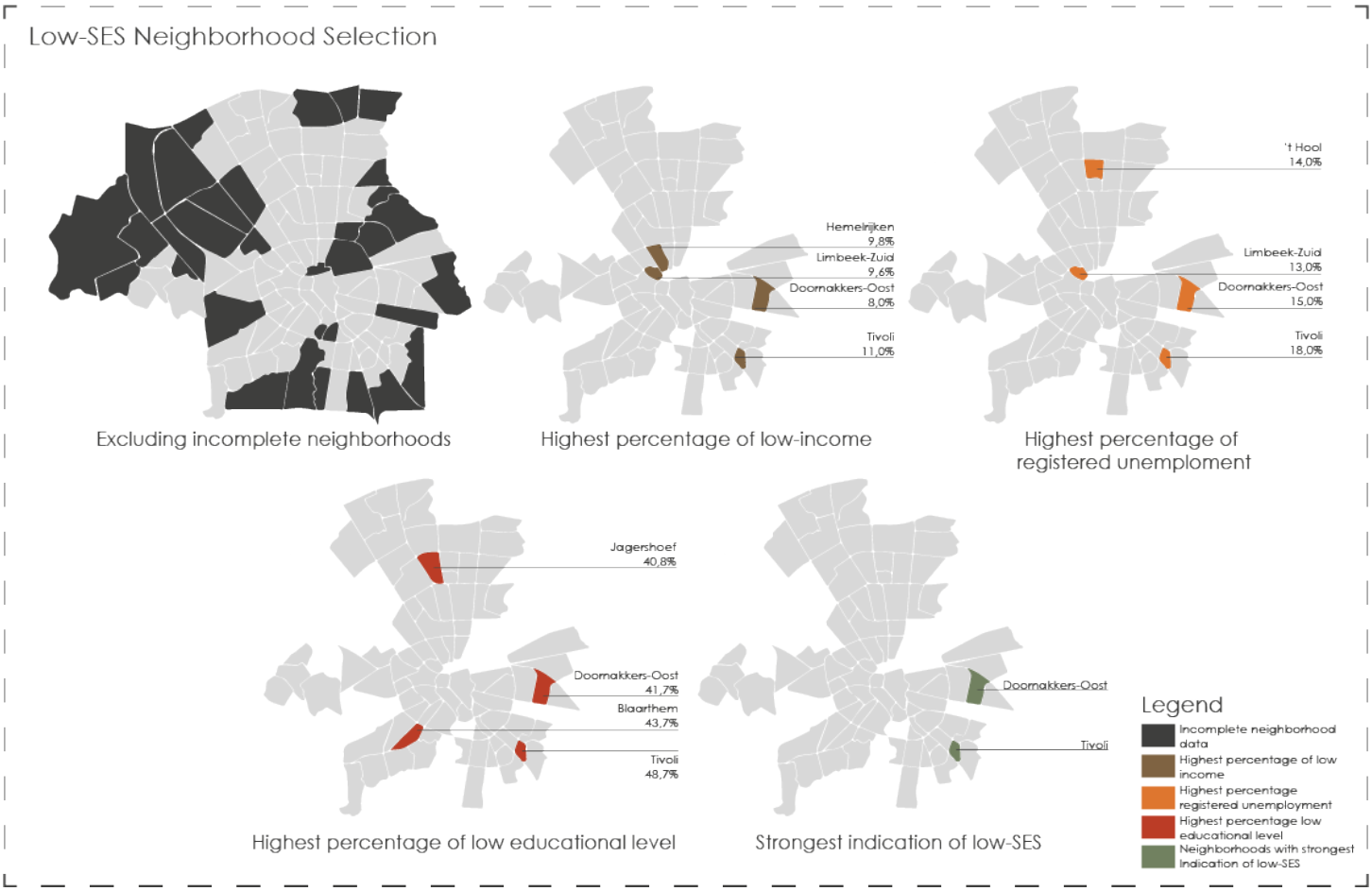


Figure 9: *Computation low-SES neighborhoods*

3.5 Conclusion

This chapter outlines the research design, including the main research question and its decision into the sub-questions. The research question was formulated to address the gap between the potential benefits of UA initiatives and the actual implementation and sustained engagement. By focusing on the drivers and barriers perceived by the two stakeholder groups. Additionally, the research model was presented including the conceptual model and the two research phases.

The first research phase includes semi-structured explorative interviews, with the secondary stakeholders. For the selection of the secondary participants, some criteria are distinguished such as inclusion in the initiation, approval, or creation process, stakeholders should have varied roles, should be from different sectors, and should have relevance to UA, to ensure a varied and elaborate result. The second research phase includes co-creation sessions with the primary stakeholders within the two selected low-SES neighborhoods, Tivoli, and Doornakkers-Oost. The neighborhoods are selected using three criteria: the percentage of unemployed individuals, the percentage of low-income in a neighborhood, and the percentage of inhabitants with a low educational level in a neighborhood. The subsequent chapters will build on this chapter, presenting the findings from the interviews and co-creation sessions, and providing a comprehensive analysis of the drivers and barriers to implementing and sustaining engagement with UA initiatives in low-SES neighborhoods.

4 Explorative Interviews

4.1 Goal

The goal of the first phase of this research is to create a comprehensive overview of the drivers and barriers of UA according to the secondary stakeholders and to gather available knowledge and experience about UA. The stakeholders involved in this phase of the research are professionals with knowledge of UA and/or the implementation of interventions, as described in 3.3.2. The interview will focus on the implementation of UA and the engagement with UA, specifically in low-SES neighborhoods. Insights of the secondary stakeholders regarding the 4 key factors of the Theory of Planned Behavior are distinguished.

4.2 Method

The research of Galvin (2015) serves as a guideline for determining the number of interviews, suggesting that data saturation is generally reached after around 12 interviews. Achieving saturation of data indicates, that the researcher is confident that conducting new interviews will not lead to new relevant data to answer the research question. Therefore, interviews are conducted and analyzed until no new relevant data emerges.

4.2.1 Recruitment of participants

During the recruitment of participants, it is important to focus on the criteria stated in chapter 3.3.2. Multiple media are used for the recruitment of participants. First, the network of the research supervisors is leveraged to provide contact information for suitable participants. Additionally, the personal network of the researcher is used, alongside extensive searches on LinkedIn for appropriate participants. Lastly, the snowball sampling method is employed, where participants recommend new suitable participants (Parker et al., 2019). Potential candidates were selected according to the criteria and approached via email, Table 3 shows the selected participants. To reach out to the participants, two email templates are created to use for recruitment as formal invitations. The first e-mail is focused on initial contact, which is more informative, while the second is focused on scheduling an appointment (Appendix C). Additionally, for contacts facilitated by the supervisors of this research, another initial contact text is created (Appendix C) .

Table 3: *Participants explorative interviews, N = Participant number, C = Number of codes*

N	Date interview	Institution	Function
1	25-03-2024	Studio Sociaal Centraal	Social designer
2	26-03-2024	Vivaldituin	Initiator UA initiative
3	29-03-2024	Voedselbos Eindhoven	Coordinator food forest initiative & nutritional expert
4	08-04-2024	Fontys Eindhoven	Senior researcher healthy living env.
5	08-04-2024	Stadsakkers	Boardmember UA initiative
6	15-04-2024	Municipality of Eindhoven	Project leader healthy urbanization
7	16-04-2024	Soontiëns	Designer/advisor urban nature
8	16-04-2024	Municipality of Eindhoven	Urban planner - Spatial policy and development sector
9	18-04-2024	Municipality of Eindhoven	Councillor for climate, energy, green and greening
10	18-04-2024	Wasven	Board member of the Green Domain Foundation

4.2.2 Creating interview guide

Before conducting the interviews, an interview guide is created, to shape the interviews. For creating a semi-structured interview guide, the five phases described by Kallio et al. (2016) are used:

1. Identifying the prerequisites for using semi-structured interviews
2. Retrieving and using previous knowledge
3. Formulation of the preliminary semi-structured interview guide
4. Pilot testing the interview guide
5. Presenting the complete semi-structured interview guide

In the first phase, the prerequisites for using a semi-structured interview should be clarified. Jain (2021) states that interviews are an interactive form of data collection compared to surveys, offering a more personalized exchange of information. This allows to rephrase or explain certain issues during the interview, giving participants the chance to elaborate and explain particular issues. The purpose of a semi-structured interview is to guide the dialogue during the interview, allowing for elaboration or clarification or to make changes during the interview when needed (Kallio et al., 2016). According to Kallio et al. (2016), semi-structured interviews specifically, can be used as a method suitable for studying people's perceptions and opinions and makes it possible to focus on issues that are meaningful according to the participant. Due to the explorative goal of the interviews, the perception, opinion, and characteristics of the participants are key to this research, this makes semi-structured interviews fitting for this research.

The second phase aims to gain a comprehensive and adequate understanding of the subject at the core of the interview. In this research, the subject is the drivers and barriers for implementing and sustaining engagement with UA in low-socioeconomic status neighborhoods. Extensive research should be performed to collect previous knowledge about UA, including definitions of UA, the current challenges of the Dutch food system, the history of UA, low-SES neighborhoods, the Theory of Planned Behavior, implementation of interventions, and case studies. This will create an informed predetermined framework for the interviews. This phase is covered in Chapter 2.

Next, the preliminary semi-structured interview guide is formulated as a tool for the interview, using previous knowledge. An interview guide, defined by Kallio et al. (2016), is a list of questions to direct conversations toward the research topic during an interview. The guide will follow a funnel structure (Fig. 10) starting with general questions focused on UA, experience with UA, and opinions about UA. Then focusing on implementation and engagement in low-SES neighborhoods. Finally, the 4 key elements of the Theory of Planned Behavior are addressed: attitude, subjective norm, perceived behavioral control, and background factors.

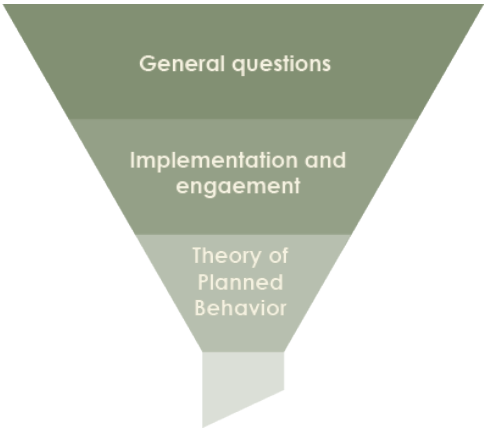


Figure 10: *Lay-out of the interview guide*

Then the main questions are formulated, following the stated layout, with follow-up questions. According to Kallio et al. (2016), the main questions cover the main content of the research subject. Participants are encouraged initially to speak freely, but follow-up questions are used to direct conversations towards the study subjects when the interviewee deviates too far from the main subject. This ensures that the participants will not be steered in a direction, and can speak freely, but certain specific elements or subjects can be brought up to be clarified.

The fourth phase involves pilot testing the semi-structured interview guide to confirm its coverage and relevance and identify any need to reformulate questions. This phase ensures that informed changes and adjustments can be made to the questions and improve the quality of the data collection. According to Kallio et al. (2016), pilot testing can also provide useful information about research integrity, ethical aspects of the questions, and the researcher's ability to conduct data collection.

In this phase, three steps of pilot testing were performed. First, the overall content of the questions was tested by a volunteer student, with no prior knowledge of UA. The test aimed to ensure the questions led to the needed answers. After this test, the questions were revised, to ensure all needed information could be retrieved during the interview. The next step was conducting internal testing and expert assessment (Kallio et al., 2016), by first discussing the questions with investigators within the research team (supervisors) and an external specialist with knowledge about the subject and aim of the research. These tests are particularly beneficial in assessing the appropriateness and comprehensiveness of the interview guide contents and provide critical information about the interview in general (Kallio et al., 2016). The last step included field testing, with a volunteer who acted as a secondary stakeholder, this time with prior knowledge about UA. This simulates a real interview situation, which can provide crucial information about the implementation of the interview (Kallio et al., 2016). This resulted in the last revision of the questions, which focused on the practicality and effectiveness of the questions. Giving room to practice follow-up and elaboration questions and enabling verification of appropriate time requirements for the interview (max. 45 minutes).

The final phase of the development process is presenting the complete semi-structured interview guide, which can be found in Appendix E. This ensures a clear list of main questions and follow-up questions with a logical structure, making it usable by other researchers (Kallio et al., 2016).

4.3 Protocol

4.3.1 Interview setting

The locations where the interviews are held will vary based on participant suggestions, ensuring a comfortable environment that encourages honest answers and opinions. The location should be calm and quiet to minimize the stress and visual and/or auditory discomfort and distraction of the participant. If a participant cannot meet physically, the interview is conducted online using MS Teams. Although, face-to-face interviews are preferred as they are the most effective way of conducting interviews.

During the interview, recordings are made, to facilitate transcription and analysis. To ensure participant privacy, the safety measures outlined by TU/e are followed. The recordings are made with a phone set to flight mode. As soon as the interview is finished, the recordings are transferred to the student OneDrive provided by the TU/e via a cable. Immediately after the transfer the recordings are deleted from the phone, after which flight mode may be turned off. The phone's voice recorder is also used to keep track of the time during the interview. MS Teams is the main tool for transcribing the interviews, along with manual monitoring.

Before the interview starts, the participant should sign the informed consent form, using the template provided by the TU/e (Appendix F). These consent forms are stored for 10 years in accordance with the TU/e guidelines. Then, a brief introduction is provided, about the goal of the research, explaining the research goal, scope, and definitions of UA and low-SES neighborhoods. Lastly, the participant is informed about the duration of the interview and that notes are made during the interview.

Every research at the TU/e involving human participants must be ethically reviewed by the Ethical Review Board (ERB). The interviews are conducted after ERB approval. All data collected and needed during this research is stored in the Student OneDrive provided by the TU/e. Personal data that is no longer necessary is deleted immediately. During the interview, only personal data that is directly necessary for the analysis is collected, such as the function of the participant. The contact details are deleted as soon as it is no longer needed to contact the participants.

4.4 Qualitative Content Analysis

After the explorative interviews, a qualitative content analysis is performed. This method systematically analyzes data to identify different themes from the interviews (Jain, 2021). To facilitate this analysis, the interviews are transcribed to examine the underlying themes in the collected text.

The analysis consists of a three-level coding process summarized in Figure 11 (Jain, 2021). The first, rough analysis, involves examining the text for all relevant elements, words, or phrases related to the main research question. These elements, words, or phrases are highlighted and labeled as "codes". In the second step of the analysis, clustering, the codes are clustered into concepts, based on their characteristics. These concepts will consist of codes that are the same, or use different words to express the same idea. The third level of analysis, grouping, involves organizing the concepts into more abstract groups, leading to the identification of themes. The themes identified through this Qualitative content analysis will represent the drivers and barriers perceived by the secondary stakeholders.

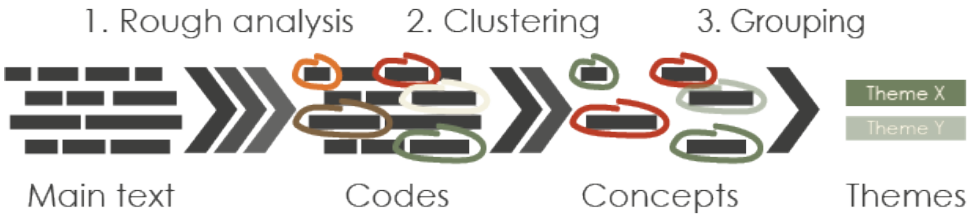


Figure 11: *Simplified model of the three steps within Qualitative content analysis, Rough analysis, Clustering, and Grouping*

4.4.1 Rough analysis, Clustering, Group

During the rough analysis, all elements, words, or phrases relevant to the main research question are labeled as codes in the transcribed text. This indicates that this element, word, or phrase is a driver or barrier. After the rough analysis of the first three interviews, an initial clustering was performed. The concepts were distinguished by clustering all codes with the same subject. This clustering resulted in nine concepts, which were re-evaluated after five interviews. At that stage the concept, 'Network' was deemed unnecessary as its codes logically fit within one of the other concepts, reducing the number of concepts to eight, presented in Table 4.

Table 4: *The eight concepts, with initial keywords*

Concept	Keywords
Economical	Subsidy, Finances, Municipality, Contacts, Importance, Managing, logistics, Other economical 'problems', Success, Other needs, Scale
Social	Meeting spot, Connection, Cohesion, Vandalism, Activities
Resources	Time, Physical space, Knowledge, Tools, Education, Expertise, Guidance
Health	Awareness, Food production, Nutrition, Fun, Physical activity, Mental health, Sickness, Physical disabilities
Initiative	Volunteers, Initiative from the neighborhood, Initiative from the municipality, dependency, Intrinsic motivation, Interest, Forcing
Continuity	Maintenance, fall-out of volunteers, Responsibility, Change of guidance, Contact, Agreements, Greying
Environmental	Insects, Biodiversity, Packaging material, Green, Nice, Awareness, Heat Island effect, Water retention, Petrification, Seasonal
Culture	Gender roles, Cultural difference, Cultural characteristics, Race

With these eight concepts, a template table was created for the remaining rough analyses, presented in Table 5. This template allowed to simultaneously do the rough analysis and the clustering. Additionally, after five interviews, the initial themes were subjectively distinguished. The themes are distinguished by grouping the codes within a concept with a similar theme. For the naming of the themes, umbrella terms were chosen which include all codes. These umbrella terms should be neutral, avoiding any suggestion that the codes within the theme are positive or negative. The Results of the rough analysis can be found in Appendix D.

Table 5: *Rough analysis template table, including concepts with related codes describing drives and barriers, and remarks*

Concept	Driver	Barrier	Remark
Economical	"Municipality could finance and/or facilitate initiatives"	"Exploitation costs"	
Social	"It can serve as meeting spot"	"Vandalism"	
...			

An Excel template was created to distribute all codes clearly and structured based on the initial concepts and themes, shown in Table 6. The template includes a tab for each of the eight concepts, displaying the associated codes. Next to this it indicates whether a code is a driver or barrier, the participant who stated the code, and the theme(s) it belongs to. Codes can fit within multiple themes; for example, the code: "Money should come from the government" fits with the themes of Institutional governance and Financial considerations. All codes are initially assigned, to their respective concepts identified during the rough analysis. If there is any doubt about a cod, it is highlighted for further assessment later.

Table 6: *Structure of table per Concept, including the codes per concept, whether the code is a driver or barrier, the participant number = N, and the theme(s) the code belongs to*

Environmental codes	Driver/Barrier	N	Theme 1	Theme 2
"More Green"	Driver	1	Greening	
"More locally produced food"	Driver	1	Awareness	
"People are afraid of bugs"	Barrier	2	Biodiversity	Disruptions
"Green looks nice"	Driver	3	Beautification	
...				

After eight and ten interviews the concepts and categories were revised. No new concepts were necessary, only the distribution and naming of the themes changed for clarity and neutrality. For example, the theme "financial challenges" is changed to "financial consideration". Additionally, highlighted codes were reassessed, and almost all of them fit within multiple concepts. For these codes, an extra list was created in the template called, "Multiple", shown in Table 7. This list includes the code, whether it is a driver or barrier, the participant number, the initial concept assigned, and the other relevant concept(s) with an explanation.

Table 7: *Structure of table for codes which fit in multiple concepts, including, the codes, whether it is a driver or barrier, the participant number = N, the initial concept of the code, and the other related concept(s)*

Codes which fit multiple concepts	**Driver/ Barrier**	**N**	**Initial concept**	**Concept 2**	**Concept 3**
"The balance between the municipality and initiators is off"	Barrier	3	Economical	Initiative	Continuity
"The impact is hard to measure"	Barrier	1	Economical	Social	Environmental
"A well-thought-out plan can ensure subsidy easily"	Driver	1	Economical	Initiative	
...					

Concluding, two summary tables are created to present the results clearly. Table 8 shows the eight concepts and the initial number of drivers and barriers, which are summed in the column sub-total codes. The column "Multiple Driver/Barrier" shows the number of drivers and barriers which are listed in "multiple", these are added to the sub-total resulting in the column "Total" codes.

Table 8: *Summary with number of drivers and barriers per concept, including the codes within multiple concepts*

Concepts	**Driver codes**	**Barrier codes**	**Sub-total codes**	**Multiple Driver/Barrier**	**Total codes**
Economical	14	45	59	0 / 2	**61**
Socoial	47	12	59	0 / 1	**60**
Resources	24	40	64	0 / 3	**67**
Health	26	7	33	0 / 0	**33**
Initiative	13	48	61	3 / 4	**68**
Continuity	5	31	36	1 / 17	**54**
Environment	29	8	37	0 / 1	**38**
Culture	5	8	13	0 / 0	**13**
Total without multiple	163	199	362	4 / 28	
Total with multiple	167	227			**394**

Additionally, the second table 9 shows all themes horizontally per concept. Below each theme, the number of codes within this theme is shown. The themes written in italic relate to institutional themes and the themes written in bold relate to communal themes. The complete results of the Qualitative content analysis can be found in Digital Appendix A1.

Table 9: *Summary clustering and Grouping, including concepts and relevant themes, with frequency of which themes are distinguished*

Concept		*Institutional*	**Communal**	Various	Various	Various	Various	Various
Economical	**Themes**	*Institutional governance*	**Community impact**	Financial Considerations	Value perception	Operations & logistics	Measurability	
	Amount	21	6	19	14	6	1	
Social	**Themes**		**Social Cohesion**	Activities	Vandalism	Ambiance		
	Amount		42	8	7	3		
Resources	**Themes**			Physical space	Knowledge	Guidance	Time	tools
	Amount			21	30	7	7	2
Health	**Themes**			Physical activity	Nutrition	Awareness	Fun	Relaxation
	Amount			12	8	7	7	2
Initiative	**Themes**	*Institutional initiative dynamics*		Motivation	Volunteers			
	Amount	24		20	16			
Continuity	**Themes**	*Institutional resilience & support*	**Communal resilience & engagement**	Responsibility				
	Amount	12	20	9				
Environmental	**Themes**			Greening	Awareness	Biodiversity	Beautification	Disruptions
	Amount			15	8	6	6	4
Culture	**Themes**							

4.5 Results

During the rough analysis, 362 codes are distinguished (Tab. 8), of which 163 drivers, and 199 barriers. This complies with the assumption that there are currently more barriers then drivers, which can indicate the current lack of implementation of UA initiatives. The concept Resources contains 59 codes, which is the highest number of codes. However, 45 of these codes are barriers. The concept Culture contains 13 codes, which is the least number of codes. Additionally, the concept Social has the most drivers, with 47 distinguished drivers, and 13 barriers. This suggests that the secondary stakeholders foresee much potential in the social aspect of UA initiatives, especially in low-SES neighborhoods. and the concept initiative has the most barriers, with 48 distinguished barriers.

The list "Multiple" includes 25 codes which fit with multiple concepts. 21 of these codes are barriers and 4 of these codes are drivers. Additionally, 18 of these codes fit within two concepts and seven of them within three codes. Most of the codes, 10 of the 25 codes, in the list "Multiple" fit with the concepts Initiative and Continuity, which indicates a relation between these two concepts. When these codes are added to the total of codes it gives a total of 394 codes with the distribution of drivers and barriers respectively, 167 and 227. This makes the gap between drivers and barriers more significant.

Table 10 shows the number of codes per participant, the lowest number of codes per participant was 27 and the highest number was 49. The low number of codes can be explained by the fact that the participant is working for the municipality, and did not have direct experience with UA. The high number of codes (49), can be explained by the fact that this participant has experience with a big socially focused UA initiative. The goal of this initiative is largely in line with the definition of UA stated in this research.

When looking at the percentage of drivers versus barriers, participant 1 was the most skeptical about UA, with 23% of the codes being drivers, and 77% barriers. This could be explained by the lack of specific experience with UA of Participant 1 and the experience with implementing social initiatives in low-SES neighborhoods. Six out of the ten participants stated more barriers than drivers in the interviews. Of the ten participants, four have direct experience with UA, half of the participants with experience are predominantly positive with more drivers than barriers, and the other half predominantly negative. This could be explained by the size of the initiatives of these participants, the predominantly positive participants had relatively small scaled initiatives. The predominantly negative participants had relatively large-scale initiatives, and therefore have more aspects to 'worry' about. Three of the ten participants work for the municipality of Eindhoven, and two of the three participants are predominantly positive, with more drivers than barriers.

Table 10: *Results of Qualitative content analysis per participant, including, participant number = N, date of the interview, C = Number of codes, the number of drivers & barriers, The percentage of driver & barriers of the total, the institution and function of the participant*

N	Date interview	C	Driver	Barrier	Institution	Function
1	25-03-2024	30	7 - 23%	23 - 77%	Studio Sociaal Centraal	Social designer
2	26-03-2024	44	25 - 57%	19 - 43%	Vivaldituin	Initiator UA initiative
3	29-03-2024	39	21 - 54%	18 - 46%	Voedselbos Eindhoven	Coordinator food forest initiative & nutritional expert
4	08-04-2024	35	15 - 43%	20 - 57%	Fontys Eindhoven	Senior researcher healthy living env.
5	08-04-2024	41	18 - 44%	23 - 56%	Stadsakkers	Boardmember UA initiative
6	15-04-2024	33	19 - 58%	14 - 42%	Municipality of Eindhoven	Project leader healthy urbanization
7	16-04-2024	27	12 - 44%	15 - 56%	Soontiëns	Designer/advisor urban nature
8	16-04-2024	37	37 - 41%	22 - 59%	Municipality of Eindhoven	Urban planner - Spatial policy and development sector
9	18-04-2024	27	14 - 52%	13 - 48%	Municipality of Eindhoven	Councillor for climate, energy, green and greening
10	18-04-2024	49	20 - 41%	29 - 59%	Wasven	Board member of the Green Domain Foundation

During the analysis, 31 themes are distinguished, which are shown in Table 9. The four themes with the most codes are Social Cohesion, Institutional Initiative Dynamics, Physical space, and Institutional Governance, with respectively 42, 24, 21, and 21 codes. The four themes with the least number of codes are Measurability, Relaxation, Tools, and Ambiance, with respectively 1, 2, 2, and 3 codes. The definitions of all the concepts and themes can be found in the table in Appendix G.

There are three themes which include codes that relate to institutions, Institutional Governance, Institutional Initiative Dynamics, and Institutional Resilience and Support. These three themes are separated due to the significant differences in subjects. The first, Institutional Governance, is focused on the structure, decision-making, financing, and mechanism of UA initiatives. Next, Institutional Initiative Dynamics focuses on how institutions (municipalities, companies, government) should and could contribute in facilitating UA initiatives, or on how citizens would like them to be involved in the initiation of projects. Lastly, Institutional Resilience and Support focuses on the keeping or losing of engagement of institutions.

Additionally, there are three themes which include codes that relate to community, Communal Impact, Social cohesion, and Communal Resilience and Engagement. These themes are separated due to the significant differences between subjects. The first theme, Community Impact, focuses on the influence of UA on the overarching economic issues of communities. Next, Social cohesion focuses on the connectedness, solidarity, the sense of belonging, within a community, resulting from participating in UA. Lastly, Communal Resilience and Engagement focuses on the keeping or losing of engagement of individuals or groups within the neighborhoods.

The theme of Awareness is used twice, once within the concept of Health and once within the concept of Environmental. These are separated by using Awareness (Hlth) and

Awareness (Env). The theme Awareness (Hlth) focuses on being conscious of, or informed by the impact of UA, related to food production and health. The theme Awareness (Env) focuses on the conscious realization or understanding of the impact of UA on the Environment.

4.6 General limitations of the Explorative interviews

Despite the valuable insights gained during the explorative interviews, some limitations should be acknowledged. While conducting the interviews some interviews did not flow as smoothly as others. Participants did not know what to answer, became quiet, or lost track of the asked question. In such situations, the interviewer had to provide additional explanations, elaborate on a question, rephrase the question, or offer examples. This could have unintentionally influenced the participants' responses.

Secondly, while an effort was made to reach information saturation as stated as a guideline, the relatively small sample size of participants may not fully capture the diversity of perspectives and experiences within the broader population of secondary stakeholders involved in UA initiatives. Additionally, the geographic concentration of the study, primarily focusing on Eindhoven, could limit the generalizability of the findings to other cities or the whole of the Netherlands. Although the densities and layouts of Dutch cities may differ, the infrastructure and urban design in Dutch cities are quite similar, featuring comparable public spaces, transportation systems, and housing structures. Additionally, the overarching national policies and frameworks that guide urban development, and the roles and dynamics of the secondary stakeholders, including municipal authorities, community organizations, and local businesses, are comparable across Dutch cities. Therefore, while the primary focus of this research is Eindhoven, the similarities of Dutch cities make the applicability of these research outcomes relevant to other urban areas in the Netherlands.

Thirdly, the recruitment of participants through networks and snowball sampling introduces potential selection bias, which might affect the representativeness of the gathered perspectives. Furthermore, the Qualitative content analysis method used for data analysis involves a level of subjectivity. Although the coding categorizing and grouping followed suggested guidelines, the interpretation of the codes, categories, and themes, might vary between researchers.

Lastly, the presence of a recording device might have impacted the participants' openness and honesty during the interviews. The use of a recording device could have heightened the perceived need to provide socially desirable answers, as participants might have been concerned about their responses and/or quotes being used in the research. However, efforts were made to mitigate this effect by ensuring the interviews were anonymized, this is communicated to participants both during and before the interviews.

4.7 Conclusion of the Explorative interviews

Concluding, during the explorative interviews, ten participants with different perspectives and knowledge are interviewed. To create a comprehensive overview of their perceived drivers and barriers of the implementation and sustained engagement of UA. During the interviews, an interview guide was used to structure the interview. The results are analyzed using Qualitative content analysis, which helps with systematically analyzing data. This data is divided into codes, which are words, elements, or phrases direct from the interview that relate to the main research question. Codes that are the same or

use different words to express the same are clustered into concepts. Lastly, concepts are organized into more abstract groups, these groups are called themes and will represent the drivers and barriers of the secondary stakeholders.

From the interviews, 362 codes are distinguished, which are predominantly barriers. These codes are divided into eight concepts such as Economical, Social, Resources, Initiative, Health, Continuity, Environmental, and Culture. The Concepts Economical, Continuity, and Initiatve contained the most barriers, with consecutively, 47, 48, and 52 barriers. Additionally, the concepts Social, Environment, and Health contained the most drivers, with consecutively, 47, 29, and 24 drivers. The concepts contain 31 themes in total, with the theme Social Cohesion being the largest containing 42 codes. Additionally, the themes Institutional Initiative Dynamics, Physical space, and Institutional Governance have respectively 24, 21, and 21 codes.

In the next phase, these concepts and themes are tested by the primary stakeholders based on their opinions and perspectives. The focus is on the perceived importance of these concepts and themes, and the perceived relevance, according to the primary stakeholders.

5 Co-creation Session

5.1 Goal

The goal of the second phase of this research is to test the insights of the first phase, based on the opinions and perspectives of the primary stakeholders. The first phase distinguished drivers and barriers for implementing and engaging with UA, distributed into 8 concepts with relevant themes. The importance of these preliminary insights is based on the frequency these concepts and themes occurred during the explorative interviews. The relevance of these insights could differ for the primary stakeholders, due to their differences in interests and stakes in the goal of UA. During the testing, primary stakeholders will indicate if they recognize the distinguished concepts as being drivers or barriers. Additionally, there is a focus on the perceived importance of these concepts and themes, in relevance to each other. Including the primary stakeholders is important, because these stakeholders are the ones who should eventually participate in, and maintain the UA initiatives, and including the residents in the design and decision-making process helps with fostering a sense of participation and ownership.

5.2 Method

The co-creation sessions will create knowledge about the perspectives and opinions of the primary stakeholders. According to Ståhlbröst et al. (2018), co-creation is part of Open Innovation, which focuses on opening innovation processes to all active stakeholders of the innovation process. This ensures that knowledge can circulate freely, and can be transformed into sustainable products and services for all. Ståhlbröst et al. (2018) states, that citizens/users must be considered as stakeholders in the innovation process, because they have their own knowledge base, individual needs, and reasons to contribute to the process. Overall, co-creation increases the success rate of new initiatives and lowers the risk of expensive failure.

Co-creation is considered an essential condition to create innovative public innovations that effectively meet the needs of citizens. Co-creation can be categorized into two main phases co-design, and co-production, both will be integrated during the sessions. Co-design focuses on involving citizens at the heart of the design, to make initiatives more efficient, and better meet the needs and preferences of the users. On the other hand, co-production focuses on shifting the power, responsibility, and resources from professionals to individuals. Both phases help the public sector and citizens better use each other's assets and resources, creating a better and more efficient outcome (Ståhlbröst et al., 2018).

To shape the co-creation session some criteria were distinguished, visualized in Figure 12, to ensure a comprehensive and clear session that results in the correct information. First of all, it is considered important that the session is interactive. An interactive session is defined as an activity where people can participate and engage actively. This can include moving, creating, and/or placing something.

The second criterion is playfulness, a playful activity will ensure that all people passing by perceive the ability to participate in this activity. This playfulness is accompanied by two factors, colorfulness, and easiness. The colorfulness is to attract attention and create curiosity from a distance. Additionally, the easiness helps with the perceived ability to participate, e.g. participants should not have to write something down or read a text.

The next criteria is focused on the language level, the language used during the session should be comprehensive and clear for all participants. This will ensure that everyone can participate in the research, and no perspectives are being left out due to a language barrier. Next, the location of the session should be public and there should be a constant flow of people walking or cycling by. This will ensure that there are enough participants to create significant data. Lastly, there must be a focus on the timeslot picked for the session, and the weather during the session.

Figure 12: *Criteria Co-creation session*

To create a co-creation session that fits these criteria in Figure 12, a brainstorming session is held. The goal of this brainstorming session is to come up with activities that fit most of the criteria. The results of the brainstorm are multiple ideas which all contain a name, activity description, pros and cons, and a visualization. The results can be found in Appendix H, these are evaluated on the criteria mentioned above with the supervisors of this research. This resulted in two activities: a Flag line, and a Bulletin board, which are elaborated in Chapter 5.3.7.

5.3 Protocol

5.3.1 General set-up

The session should stand out to ensure that the session will attract respondents. A party tent will help with the visibility from afar and will ensure that there is a dry spot in case of rain. Additionally, small vegetable gardens will help with making the session visible. It will act as an 'example' of a UA initiative, which can help with explaining the goal of the session. The vegetable garden example can be seen in Figure 13. Lastly, vibrant colors are used for the activities to attract the attention of people passing by.

Figure 13: *Miniature example vegetable gardens, co-creation session*

A general guiding sheet is created for the participants to elaborate on the research in language level B1, which is displayed in Appendix I. This form indicates the goal and small elaboration of the research, the name and contact information of the main researcher, the age restriction for participation, and the duration of the three activities, and it assesses the anonymity of the participants.

Additionally, for all activities guiding sheets are created for the participants, to elaborate on the goal, and method of the activity, in language level B1 (Chapter 5.3.2). These forms include a road map of the steps that should be taken, an example figure of the activity, and an elaboration of the 'words' used during the activity (Appendix I). The 'words' used in the activity correspond to the concepts found in the qualitative content analysis in chapter 4.4, translated to Dutch and in language level B1. At the bottom of the explanation form the concepts are shown, with the corresponding themes in Dutch and in language level 1.

During the sessions, there are volunteers to help facilitate the session. These volunteers will help with setting up the activity and help guide the activities, where needed. These volunteers are informed thoroughly about the research goal and co-creation session, by the main researcher.

5.3.2 Language level

During the co-creation sessions the Dutch language level B1 is used. Language level B1 is understandable for the largest part of the Dutch residents (Ministerie van Algemene Zaken, 2024). To check the words used during the Co-creation session, an online tool is used (Is Het B1?, n.d.). The concepts and themes distinguished in the qualitative content analysis in chapter 3 are translated and checked in the online language level B1 tool, and shown in Table 11.

Table 11: *Naming categories and concepts, academical and Dutch language level B1*

Concept Academical	**Category Academical**	**Concept Dutch B1**	**Category Dutch B1**
Economical		**Geld & organisatie**	
	Measurability		Je kan het meten
	Communal impact		Het beter worden van de buurt
	Financial considerations		Geldzaken
	Institutional governance		De gemeente regelt dingen
	Value perception		Zien dat het waarde heeft
	Operation & logistics		Planning en organisatie
Social		**Sociaal**	
	Activities		Activiteiten
	Ambiance		Sfeer
	Vandalism		Express kapot maken
	Social cohesion		Sociale verbinding
Resources		**Wat je nodig hebt**	
	Knowledge		Kennis
	Guidance		Begeleiding
	Physical space		Ruimte
	Time		Tijd
	Tools		Gereedschap
Initiative		**Eerste stap zetten**	
	Institutional initiative dynamics		Eerste stap vanuit de gemeente
	Motivation		Zin hebben in, Motivatie
	Volunteers		Vrijwilligers
Health		**Gezondheid**	
	Physical activity		Bewegen
	Relaxation		Ontspannen
	Awerness (Hlth)		Waar is het goed voor
	Nutrition		Voeding
	Fun		Plezier
Continuity		**Blijven bestaan**	
	Institutional resilience and support		Vaste ondersteuning & betrokkenheid van de gemeente
	Communal resilience & engagement		Vaste ondersteuning & betrokkenheid van de gemeente
	Responsibility		Verantwoordelijkheid
Environmental		**Milieu**	
	Awereness (Env)		Bewust zijn van het effect
	Biodiversity		Veel verschillende dieren & planten
	Disruptions		Slecht weer, Ongedierte
	Beautification		Mooier maken
	Greening		Groener maken
Culture		**Cultuur**	

5.3.3 Location of the sessions

In chapter 3.4.2 the neighborhoods Tivoli and Doornakkers-Oost, were selected for the co-creation session. To select a specific location in the neighborhood, both neighborhoods are visited. During the location visit, photos are taken, and accessibility and potential are assessed.

To ensure as many respondents as possible, a location outside is preferred. This should be a public location with a constant flow of people. Public locations such as parks, grass courts, squares playgrounds, and grocery stores were considered, these locations naturally create an inflow and outflow of people. Both neighborhoods do not have any grocery stores, so these are excluded. Additionally, playgrounds are not preferred, because these attract a very specific group of people, children and parents with children. Children can not participate in this resource due to ethical age restrictions, and the lack of knowledge about the subject.

This results in, parks, grass courts, and squares, these locations attract all sorts of people, including dog owners, parents with children, and people visiting/working out-/walking through these locations. Preferably the location is located in the center of the neighborhood, this increases the chance that the respondent is a resident of this neighborhood. The location should be accessible for everyone, so there should be a focus on nearby wheelchair ramps if needed, and close to an accessible road or sidewalk. Next to this, there should be a focus on safety for everyone, so no busy roads close to the location. Additionally, the session should not obstruct the flow of traffic or people passing by.

5.3.4 Timeslot

The timeslot needs to meet certain requirements to guarantee that as many people as possible are outside. The research focuses on people above 18, so the session will take place after 17:00, to ensure people are home from work. Until 19:00 there is a high possibility of children playing outside, this is avoided to ensure that the group of respondents is varied. The sessions will take place in May/June, in this month the sun will set after 21:30. Between 19:00 and 21:00 people are probably finished eating dinner and going outside to walk the dog or get some fresh air. To conclude, the timeslot of 19:00 – 21:00 is used for organizing the sessions.

5.3.5 Weather

The sessions is weather dependent, this will increase the chance of people being outside. During the day leading up to the session, the weather will checked frequently. At 17:00 it is decided if the session is canceled when rain is forecasted during the timeslot.

5.3.6 Consent, Ethical Consideration, and data storage

Every research at the TU/e involving human participants must be ethically reviewed by the Ethical Review Board (ERB). However, during this part of the research, no personal information is collected. This in combination with the importance of a low threshold for the participants to participate, led to another sort of consent. In consent with the data steward of the TU/e, it is decided to focus on spoken consent. This includes a short spoken explanation about the research being part of the TU/e, and an elaboration of the research goal. If participants want more information about their consent, an elaborative consent form with all information should be accessible. All data collected and needed during this research is stored in the Student OneDrive provided by the TU/e.

5.3.7 Activities

Flag line

The goal of this activity is to answer one of the four questions by ranking the eight distinguished concepts, from important to unimportant. The four questions are distinguished based on the main research question. The first two of the questions focus on the implementation of UA, and the second two questions focus on the engagement with UA:

1. Why would you start a community garden?
2. Why wouldn't you start a community garden?
3. Why would you engage in a community garden?
4. Why wouldn't you engage in a community garden?

There are four flag lines available during the session, one for each question (Fig. 14). This will ensure that multiple respondents can participate in the activity at the same time. Participants are asked to make rankings for all questions to gather as much information as possible. When the participant is finished with ranking the concepts, a picture is taken of the ranking. These pictures are used to analyze the results. The duration of this activity is about 2-5 minutes per question.

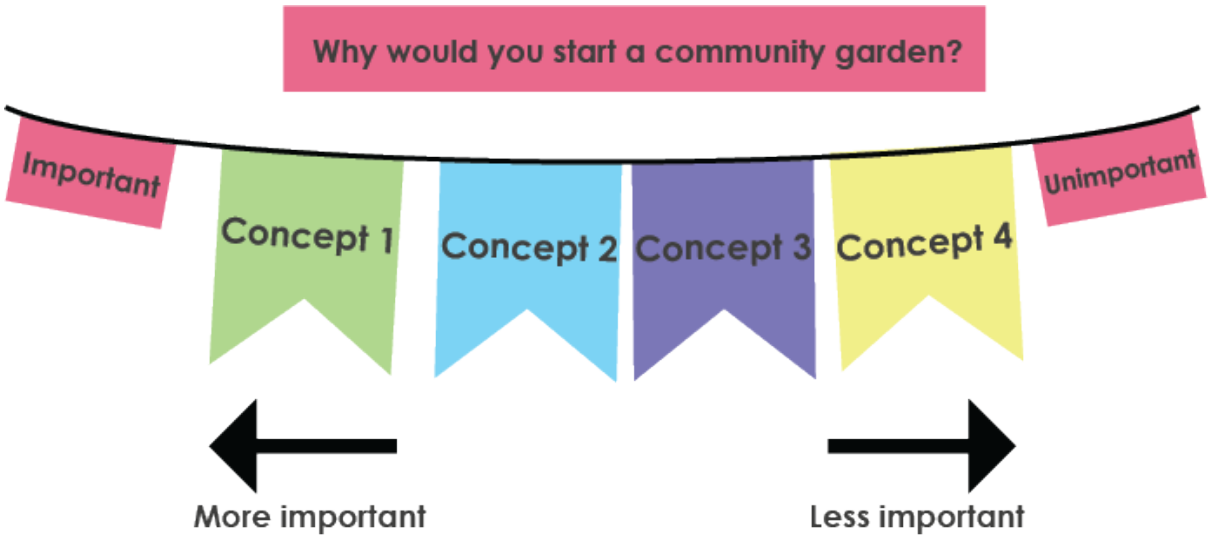


Figure 14: *Explanatory figure of the flag line activity*

This activity includes three ways of information gathering. The first one is the ranking of the concepts, the participant subjectively ranks the concepts from important to unimportant. This will give insights in the relative importance, this concept is considered more or less important than that concept. Next, participants are not obligated to rank all eight concepts, concepts can be excluded. A concept can be excluded when the participants consider this concept irrelevant to the question. This will give insights into if the concepts are considered relevant and/or related to the questions according to the participants. Lastly, the flag line will give an indication of the weight of the concepts. When a flag is placed to the left of the line, this will indicate more importance. When a flag is placed to the right of the line, this will indicate less importance. When a flag is placed in the middle of the line, this will indicate that the concept is considered neutral.

Bulletin board

The goal of this activity is to answer one of the two questions by picking yes or no and explaining this by selecting one concept. The two questions are distinguished based on the main research question. The first question focuses on the implementation of UA, and the second question focuses on the engagement with UA:

1. Would you start a community garden?
2. Would you engage in a community garden?

There are two bulletin boards available during the sessions, one for each question (Fig. 15). The bulletin board will include the question, the option between Yes and No, and the 8 concepts with the themes corresponding with the concept. The participant can answer the question on the board by pricking a pushpin in Yes or No and in the theme(s) most relevant in answering Yes or No. These pushpins are connected by red or green rope, red when no is answered, and green when yes is answered. This will indicate the connection between the pushpins, and give a reason why a certain answer is given.

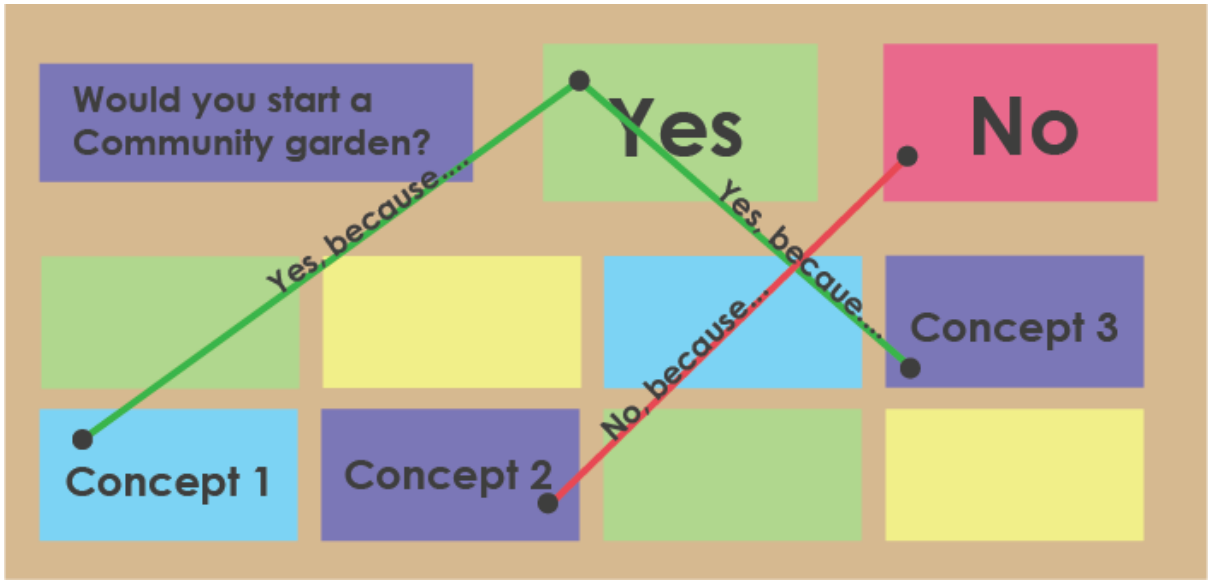


Figure 15: *Explanatory figure of the Bulletin board*

Mini-interview

The goal of this activity is to collect elaborative information from participants who show active interest in the session. Participants who participated in the flag line and bulletin board activity, and who show interest during these activities in, or have experience with UA, are asked to participate in a mini-interview. For these mini-interviews ten questions are prepared focused on experience with UA, opinion about UA, the implementation of and engagement with UA.

1. Do you have experience with Urban Agriculture?
2. What is your opinion about Urban Agriculture?
3. What stops you from starting an Urban Agriculture initiative in your neighborhood?
4. Why would you start an Urban Agriculture initiative?

5. Why would you engage in an Urban Agriculture initiative?
6. What stops you from engaging in an Urban Agriculture initiative?
7. Which resources do you miss for starting an Urban Agriculute initiative?
8. Who should start an Urban Agriculuture initiative?
9. Who should maintain an Urban Agriculture initiative?
10. Do you need help or guidance to start an Urban Agriculture initiative, and how does this help or guidance look like?

For this activity a guiding sheet is made, which differs from the others. This guiding sheet is focused on the interviewer instead of the participants, including the steps and questions. During this activity, a recorder is used.

For this specific part of the session, separate consent should be given by the participants, due to the more personal nature of this activity. Consent is given by signing a consent form, the template for this consent form is provided by the TU/e (Appendix I). These consent forms are stored for 10 years in accordance with TU/e guidelines.

Kids activity

To ensure parents of children can participate in the activities, a word search puzzle is created for the children (Appendix I). The word search is linked to the small vegetable gardens, each vegetable in the garden is a word in the word search.

5.4 Analysis

After the co-creation sessions, multiple analyses are performed for the different activities. The Borda count method is used to analyze the flag-line activity. The Borda count method assigns points to the rank given by a participant. When a concept is ranked last, it receives 1 point and the second-to-last receives 2, and so on, until 8 points for the concept which is ranked first. Then the points are added up for each concept, which results in a ranking of the concepts with most 'important' with the most points and 'uniportant' with least points. The Borda count is a consensus-based system since it can sometimes choose the on average best option, over the one with the majority of the support (Homp et al., 2023). Additionally, this method is useful, because the second and third choices are also relevant in this research.

This analysis method is combined with the majority criterion. The majority criterion states that if a concept has the majority of first ranked, then the concept should be the most important (Homp et al., 2023). The combination of both analysis methods, ensures important nuances are not missed out, e.g. the most agreed-upon first-ranked concept, does not have to be the top-ranked concept. Using both methods allows for validation and cross-checking of the results, if both indicate the same top concept, it can strengthen the significance of the findings. Additionally, combining the methods can help check the results, and ensure that the analysis is not skewed by outliers.

The analysis of the bulletin board activity is done using Excel. For the analysis, a template is created, shown in Table 12. The template contains all concepts and related themes and the number of 'yes' and 'no' responses. Additionally, for each 'yes' or 'no' response it contains one concept that is picked to elaborate on the response, and it shows when a specific theme was picked within the concept. After filling in the template, the

data is compressed to a table that shows a summary of the data, only containing the concepts and themes used to elaborate on the 'yes' and 'no' responses.

Table 12: *Template Bulletin board analysis*

Concept	**Theme**	**Yes**	Specific	**No**	specific
Economical		**1**		**4**	
	Volunteers		0		0
	Motivation		0		4
	Institutional Initiative dynamics		0		0
Sociaal		**7**		**2**	
	Social cohesion		1		0
...					

For both activities, the results of the two neighborhoods are initially analyzed separately. Additionally, data from both neighborhoods are combined and analyzed together. This ensures that comparisons between activities, methods, and neighborhoods can be made, to find similarities, differences, and gaps.

To distinguish the drivers and barriers of the primary stakeholders, the results of both activities are combined. The results of the bulletin board could directly be relevant driving or motivating concepts and themes, and concepts and themes which act as barriers. However, the results of the flag line only result in the perceived importance of or unimportance of a concept. By combining these results, a comprehensive understanding of drivers and barriers can be created.

The interpretation of the combined results can be found in Table 13. The combined results are interpreted like this: concepts that are ranked low during the flag line activity, may perceived as 'less important', 'negative', or 'bad'. However, they are not automatically considered barriers, due to a lack of evidence. This evidence is provided by the results of the bulletin board. Identification is necessary, whether or not these concepts are mentioned as elaboration on the 'no' response on the bulletin board. When the concept which is ranked low, is also mentioned by a majority of the participants as an elaboration on the 'no' response, it is likely to be a strong barrier. When the concept which is ranked low, is not mentioned as an elaboration on the 'no' response, this concept may simply be a lesser concern or importance when implementing UA initiatives or influencing engagement rather than an active barrier.

Table 13: *Analysis combined results of the flag-line, and bulletin board activity*

	Concept ranked high (flag-line)	**Concept ranked low (flag-line)**
Concept used to elaborate on 'yes' response	Concept is a driver or strong motivator	Concept is not initially seen as important, but has a specific appeal or perceived benefit which motivates the participant
Concept not used to elaborate	Concept is perceived important, but not a primary motivator, possibly gains relevance after implementation, should be in place but is no deciding factor, and has potential in becoming driver	Concept is relatively less important and/or weak barrier
Concept used to elaborate on 'no' response	Concept is perceived important, but poses challenges or limitations, is critical, but has difficulties associated, and has potential in becoming strong driver	Concept is barrier

The concepts which are ranked high during the flag line activity, are perceived as 'important', 'positive', or 'good' when starting a UA initiative or engaging in UA initiatives. When the concept is also mentioned as an elaboration on the response 'yes' on the bulletin board, this could confirm them as drivers. When the concept is not mentioned as an elaboration on the response 'yes', the concept should be investigated further. This may indicate underlying conditions which should be met for these concepts to act as motivators. For example in this research, the availability of space could be an important theme that should be met for implementing an UA initiative, therefore the concept Resources is ranked high. However, this concept is not directly an explanation as to why residents would want to start an initiative, and therefore not used as an elaboration on the response 'yes'. The possibilities of combination 'in-between' these elaborated examples can be found in Table 13.

5.5 Results

In this chapter, the results of the co-creation sessions are discussed. First, the results of the flag-line activity are discussed, followed by the results of the bulletin board. For both activities, the results of the two neighborhoods are discussed separately and combined. An overview of the setting of the co-creation sessions is shown in Figure 16. The whole of the Co-creation analysis can be found in Digital Appendix B1. In this research the following questions are considered as the questions focused on implementation:

- Why would you start a community garden? (Flag-line)
- Would you start a community garden? (Bulletin board)

Additionally, the following questions are considered as the questions focused on sustaining engagement:

- Why would you engage in a community garden? (Flag-line)
- Would you engage in a community garden? (Bulletin board)

Figure 16: *Setting co-creation session in Tivoli, with one flag-line, the bulletin boards, and the small vegetable gardens*

5.5.1 Descriptive results Flag-line activity

First, the result is discussed of the two neighborhoods combined, for the question related to implementation. Table 14 shows the results of the sixteen participants using the Borda count method. The concepts Health and Social are ranked first and second, and Economical and Culture are ranked seventh and eighth. But when this is compared with the majority method, Initiative and Social are ranked as most important by six and five participants, and Culture and Economical are similarly ranked last by five and three participants. So health has an overall higher score within the Borda count method, compared to only being ranked first by two participants. While the concept Cultural is ranked last for the Borda count method while having a majority of five out of 16 participants.

Table 14: *Combined results Tivoli and Doornakkers-Oost for the flag line activity, for the question related to implementation, for the Borda count and Majority method. N Ranked first = Number of times ranked first, N Ranked last = Number of times ranked last*

	Borda count method		Majority method	
Concepts	**Nuber of points**	**Rank**	**N Ranked first**	**N Ranked last**
Health	93	**1**	2	1
Social	90	**2**	5	0
Initiative	84	**3**	6	2
Environment	78	**4**	2	2
Continuity	63	**5**	0	2
Resources	60	**6**	0	0
Economical	60	**6**	0	3
Culture	45	**7**	0	5

When looking at the same question specifically for Tivoli, with nine participants, shown in Table 15. The concepts Environmental and Health are ranked first and second, considering the Borda count method, while Environmental is only ranked first once. Initiative is ranked first by four, and Social and Health are ranked first by two of the nine participants. Additionally, the concepts Culture and Resources are ranked seventh and eighth, considering the Borda count method. While the concept Resources is not ranked last by any of the participants, Culture by two participants, and Economical by three.

Looking to the results of Doornakkers-Oost (Tab. 15), where the concepts Health and Social are ranked first and second, while only one person ranked Health first and three ranked Social first, and Environment and Culture are ranked seventh and eighth, which is similar to the majority method where culture is ranked last by three last by three out of seven participants and Environmental by 2 participants.

Table 15: *Results of Tivoli and Doornakkers-Oost for the flag-line activity, for the question related to implementation, for the Borda count and Majority method. First = number of times ranked first, Last = number of times ranked last*

Method	Borda		Majority		Borda		Majority	
Concepts	**Points**	**Rank**	**First**	**Last**	**Points**	**Rank**	**First**	**Last**
Environment	58	**1**	1	0	20	**6**	1	2
Health	51	**2**	2	1	42	**1**	1	0
Initiative	50	**3**	4	1	34	**3**	2	1
Social	49	**4**	2	0	41	**2**	3	0
Continuity	30	**5**	0	1	33	**4**	0	1
Economical	30	**5**	0	3	30	**5**	0	0
Culture	27	**6**	0	2	18	**7**	0	3
Resources	26	**7**	0	0	34	**3**	0	0
Neighborhood	Tivoli		9		Drn.-Oost		7	

The similarities between Tivoli and Doornakkers-Oost for this question can be seen when focusing on the majority method. This shows that the concepts Initiative and Social both are ranked first by a majority of the participants, in Tivoli by four and two

out of nine participants, and in Doornakkers-Oost by two and three participants out of seven. Additionally, Cultural is ranked last by two out of nine participants for Tivoli (Second to last majority) and by three out of seven participants for Doornakkers-Oost (majority). When focusing on the Borda count method, Health is ranked second in Tivoli and first in Doornakkers-Oost, and Culture is ranked second to last and last.

Differences when focusing on the majority method can be seen for the concept Economical which has the majority with being ranked last by three out of nine participants and not being ranked last at all in Doornakkers-Oost. Another interesting difference can be seen when focused on the Borda count method, when the concept Environmental is compared, for both Tivoli and Doornakkers-oost, Environmental is ranked first in Tivoli, and for Doornakkers-Oost it is ranked second to last. Lastly, a difference can be seen when comparing the concept Resources, it is ranked last for Tivoli, but third for Doornakkers-Oost.

When looking at the question, focused on engagement, which was only evaluated in Doornakkers-Oost, presented in Table 16, the concept Health was ranked first in both the Borda count and majority method. By being ranked first by four of the six participants, Culture was ranked last in both methods, with being ranked last by two participants.

Table 16: *Results of Doornakkers-Oost for the flag line activity, for the question related to engagement, for the Borda count and Majority mehtod. N Ranked first = Number of times ranked first, N Ranked last = Number of times ranked last*

	Borda count method		Majority method	
Concepts	**Nuber of points**	**Rank**	**N Ranked first**	**N ranked last**
Health	40	**1**	4	0
Social	35	**2**	0	0
Economical	32	**3**	0	0
Continuity	28	**4**	2	0
Initiative	27	**5**	0	1
Environment	19	**6**	0	0
Resources	19	**6**	0	1
Culture	14	**7**	0	2

Overall, for the question focused on implementation, comparing the results of the Borda count and majority method does not consequently result in the same concepts being ranked as 'important'. Therefore, the results of both methods are combined during comparisons later on. The concept Health consequently appears as being ranked as first or second in the Borda count method, for both the combined and separated results, so is considered one of the most important concepts. Additionally, Initiative and Social consequently appear as being ranked first for the majority, for both the combined and separated results, so will also be considered as key driving concepts.

For the concepts ranked as 'least important' the Borda count and Majority method results again are combined. The Borda count showed Cultural as being ranked last or second to last for both the combined and separated results, and therefore be considered as the least important concept. The majority method also showed Cultural being ranked last by the majority. Additionally, the concepts Economical and Environmental are ranked

last by the majority consecutively for Tivoli and Doornakkers-Oost and therefore are considered as concepts seen as least important. The results of the question focused on engagement, fall in line with these results.

5.5.2 Descriptive results Bulletin board activity

Figure 17: *Combined results of Tivoli and Doornakkers-Oost for the bulletin boards, on the left the question focused on implementation, on the right the question focused on sustaining engagement*

The combined results of the bulletin boards are shown in Figure 17. First, the combined results shown in Table 17 of the question focused on engagement are discussed. With 31 participants the majority of 22 of the participants answered with 'yes', and 9 answered with 'no'. The concepts Social, Health, and Environmental as the main driving concepts, for choosing yes with consecutive 7, 5, and 5 participants picking 'yes' and this concept as elaboration. Only two participants picked a specific theme within Social to elaborate on choosing the response 'yes', which were the themes Social Cohesion and Ambiance. Additionally, one person picked a specific theme within the concept Environmental, Biodiversity, and none picked a specific theme within Health, to elaborate on. The biggest barrier was the concept Initiative, with four participants picking Initiative as concept and all four elaborated with specific motivation as a theme.

Table 17: *Combined results Tivoli and Doornakkers-Oost for the Bulletin board activity, for the question related to engagement*

Concept	Theme	**Yes**	Specific	**No**	Specific
Initiative		**1**		**4**	
	Motivation		0		4
Social		**7**		**2**	
	Social cohesion		1		0
	Ambiance		1		0
Resources		**1**		**2**	
	Knowledge		0		1
	Time		0		1
	Physical space		1		0
Health		**5**		**1**	
Environmental		**5**		**0**	
	Biodiversity		1		0
Continuity		**1**		**0**	
Culture		**2**		**0**	
Total		22		9	

When separating the results from Tivoli and Doornakkers-Oost, as shown in Table 18, the first thing that can be noticed is that all six participants from Tivoli answered with 'yes', with 3 participants picking the concept Social as elaboration. Then looking at Doornakkers-Oost, the answers are more distributed, with 16 participants answering with 'yes' and 9 participants answering with 'no'. With, Social, Health, and Environment are the concepts picked to elaborate on yes being their answer, by consecutive 4, 4, and 4 participants.

Table 18: *Results of Tivoli and Doornakkers-Oost for the Bulletin board activity, for the question related to engagement*

Concept	Theme	**Yes**	Specific	**No**	Specific
Tivoli					
Initiative		**1**		**0**	
Social		**3**		**0**	
	Ambiance		1		0
Health		**1**		**0**	
Environmental		**1**		**0**	
Total		6		0	
Doornakkers-Oost					
Initiative		**0**		**4**	
	Motivation		0		4
Social		**4**		**2**	
	Social cohesion		1		0
Resources		**1**		**2**	
	Knowledge		0		1
	Time		0		1
	Physical space		1		0
Health		**4**		**1**	
Environment		**4**		**0**	
	Biodiversity		1		0
Continuity		**1**		**0**	
Culture		**2**		**0**	
Total		16		9	

Secondly, the combined results shown in Table 19 of the question focused on implementation is discussed. This board had a total of 22 participants, with a more distributed result, with 10 participants answering with yes and 12 with no. Similarly to the other question, Social, Health, and environment are again the driving concepts for choosing yes, with consecutive 3, 2, and 2 participants picking the concepts as elaboration. Nutrition within Health is the only theme that was picked, to more specifically elaborate on choosing yes. For choosing no, the concept Resources is the biggest barrier, with four participants picking this concept. These four participants chose to elaborate with themes within the concept Resources, three picking time, and one picking knowledge to elaborate. Initiative and Social are the second biggest barriers with both 3 participants. Among these participants, one specified picking the theme Vandalism within Social, and one picking the theme Motivation within Initiative.

Table 19: *Combined results Tivoli and Doornakkers-Oost for the Bulletin board activity, for the question related to implementation*

Concept	Theme	**Yes**	Specific	**No**	Specific
Initiative		**1**		**3**	
	Motivation		0		1
	Institutional Initiative dynamics		1		0
Social		**3**		**3**	
	Vandalism		0		1
Resources		**0**		**4**	
	Knowledge		0		1
	Time		0		3
Health		**2**		**0**	
	Nutrition		1		0
Economical		**1**		**1**	
	Financial considerations		1		1
Environmental		**2**		**0**	
Continuity		**0**		**1**	
	Responsibility		0		1
Culture		**1**		**0**	
Total		10		12	

Table 20 shows, that when the results from Tivoli and Doornakkers-Oost are separated, an interesting distribution can be noticed. The five participants of Tivoli all answered with no, with Resources as the biggest barrier. With three participants specifically picking the theme Time within Resources to elaborate on their answers. For Doornakkers-Oost, the answers are distributed, with 10 participants answering yes and seven answering no. With as concepts elaborating on yes: Social, Health, and Environment with consecutively 3, 2, and 2 participants picking these concepts. One of the participants picked Health, elaborating with specifically choosing the theme Nutrition. The concepts Initiative is largest barrier, with three participants, of which one elaborating with the specific theme motivation, on their answer. Interestingly, social is the second biggest barrier with two participants picking the concept Social to elaborate on their answer. So in Doornakkers-Oost, social is one of the biggest drivers and barriers.

Table 20: *Combined results Tivoli and Doornakkers-Oost for the Bulletin board activity, for the question related to implementation*

Concept	Theme	**Yes**	Specific	**No**	Specific
		Tivoli			
Social		**0**		**1**	
	Vandalism		0		1
Resources		**0**		**3**	
	Time		0		3
Economical		**0**		**1**	
	Financial considerations		0		1
Total		0		5	
		Doornakkers-Oost			
Initiative		**1**		**3**	
	Motivation		0		1
	Institutional Initiative dynamics		1		0
Social		**3**		**2**	
Resources		**0**		**1**	
	Knowledge		0		1
Health		**2**		**0**	
	Nutrition		1		0
Economical		**1**		**0**	
	Financial considerations		1		0
Environmental		**2**		**0**	
Continuity		**0**		**1**	
	Responsibility		0		1
Culture		**1**		**0**	
Total		10		7	

For both questions, the concepts Social Health and Environment, are used most to elaborate on answering yes, so these are perceived as the main drivers. When looking at the main barriers, the concept Initiative was picked the most to elaborate on answering no, for the engagement question. Additionally, for the implementation question the concept Resources was the biggest barrier, with initiative and social tied as second biggest barriers.

5.6 Comparison results neighborhoods

For the Flag-line activity, the question focused on implementation can be compared between the two neighborhoods. Using the Borda count method, the concept Health is similarly ranked high for both neighborhoods, first for Tivoli and second for Doornakker-Oost. Additionally, the concept Culture is ranked low for both neighborhoods, seventh for Doornakkers-Oost and eighth for Tivoli. However, a significant difference can be observed in the ranking of the concept Enironmental, which is first for Tivoli and second-to-last

for Doornakkers-Oost. Another notable difference is the Resources concept, ranked last for Tivoli and third for Doornakkers-Oost.

Using the Majority method, similarities include the concept Initiative, ranked first by most participants for Tivoli, and ranked first by the second most participants for Doornakkers-Oost. The concept Social is ranked first by most participants in Doornakkers-Oost. The concept Culture, is ranked last by most participants in Doornakkers-Oost, with Environment close as second. For Tivoli, the concept Economical is ranked last by most participants, with Culture second.

In the bulletin board activity, an interesting difference is observed between the two neighborhoods. The participants from Tivoli unanimously answered the question focused on implementation with 'no', and the question focused on engagement with 'yes'. Additionally, the majority of participants who responded with 'no' on the implementation question, elaborated on this specifically with the theme Time witin the concept Resources. Furthermore, the majority of the participants from Tivoli responding with 'yes' on the engagement question, elaborated with the concept Social. This indicates that the participants of Tivoli have a clear opinion about UA, and would probably engage in UA initiatives, but see multiple barriers for implementing UA initiatives.

In Doornakkers-Oost, the results of the bulletin board activity are more varied. Ten participants responded 'yes' and seven 'no' to the implementation question, while sixteen answered 'yes' and nine 'no' to the engagement question. The concept Social was most frequently chosen for elaboration on the 'yes' response, and the concept Initiative, was most frequently chosen for the 'no' response on the implementation question. Additionally, for the engagement question, the concepts Social, Health, and Environment are equally chosen by four participants, for the 'yes' response. While Initiative was most frequently chosen, by four participants, for the 'no' response.

Concluding, using Table 13 to analyse the combined results differences and similarities are evident between the two neighborhoods. Both neighborhoods perceive Social and Health as 'important' concepts during the Flag-line activity and are both elaborations on 'yes' responses during the bulletin board activity. Therefore the concepts Social and Health are considered as a driving concept. However, differences are observed for the some concepts. Environmental, is perceived as 'important' in Tivoli and 'unimportant' in Doornakkers-Oost. This could indicate that Doornakkers-Oost, do not consider Environmental influences as important, but could also indicate that it is considered not relevant for starting or engaging in UA initiatives. The perceived relevance of the concept Resources in Tivoli indicates that the theme Time, within Recources is considered a barrier in Tivoli. The perceived relevance of the concept Initiative in Doornakkers-Oost, indicates that it is perceived as a barrier.

5.7 Limitations of the Co-creation sessions

5.7.1 Limitations of the co-creation method

Despite the efforts mentioned above, some issues arose during the co-creation sessions. During the flag-line activity, participants struggled with the weighting of the concepts. The opportunity was created by offering enough room on the lines to do this, but during the first couple of rankings, it became evident that combining the ranking and the weighing was too challenging.

Additionally, the initial idea was to rank the concepts from important to unimportant, but it became evident that for some concepts importance was too specific and unclear. Therefore it was decided to rank from green to red, where green is interpreted as positive, good, and important, and red is interpreted as negative, bad, and unimportant, during the second session. This was proven less challenging for the participants

During the first session, the four initial questions for the flag-line were used, which included two negative phrased questions: Why would you not engage in a UA initiative? and why would you not start a UA initiative? When answering this question it led to double negative, which led to confusion and made answering these questions challenging and unclear, these were not used during the second session.

For the Co-creation sessions two side activities were created, a word search for the children. The goal of this word search was to occupy children, who are not allowed to participate in the research, so parents could participate in the activities. The second side activity is a mini-interview, the goal of the interview is to interview participants who showed active interest in the subject of UA. For the interview, questions, a guide sheet, a recorder, and consent forms are prepared. However, there is needed a lot of time, attention, and complete information about the research for the interviewer, to conduct a proper interview. During the sessions, it became evident that there weren't enough volunteers matching these criteria.

5.7.2 General limitations of the co-creation sessions

Despite the valuable insights gained during the co-creation sessions, several limitations should be acknowledged. The relatively small number of respondents, for both co-creation sessions, may not fully capture the diversity of perspectives of a whole neighborhood. The small number of respondents makes it difficult to generalize the results on a bigger scale. Additionally, the geographic concentration of the study, primarily focused on Eindhoven, also limits the generalizability of the findings to other cities.

After the first co-creation session in Tivoli, some changes were made to the flag-line activity, to ensure the activity is more comprehensive for the participants. This however may lead to differences in the results of the activity. Additionally, the question focused on engagement in the flag-line activity was only presented to participants in Doornakkers-Oost, due to a management error. This makes the results for the questions focused on engagement less coherent.

In consultation with the Ethics Review Board, the decision was made not to collect socio-demographic information for both the flag-line and bulletin board activity. This allowed that participation of the co-creation session could rely on spoken consent. The only demographic question asked was whether participants lived in the selected neighborhood. While this confirms residence in a low-SES neighborhood, it does not ensure that each participant meets the specific low-SES criteria outlined in Chapter 3.4.2. This implies that the results of the primary stakeholders could contain data from non-low-SES residents, which could influence the coherence of the results.

During both the flag-line and bulletin board activities, there is a possibility that participants provided socially desirable answers. This could occur because the sessions were held in the participants' neighborhood, leading them to change their answers to avoid judgment by neighbors or to align their answers with what they perceive as the mainstream opinion. Additionally, participants might emphasize the importance of some concepts

like environment and health due to their current popularity, even if participants do not personally consider them as important. For the bulletin board activity specifically, all answers given by the participants are displayed, this could bias the responses of other participants.

Furthermore, multiple disturbances occurred during the sessions, potentially influencing the number of participants and their opinions. During the second session, a bystander occupied a lot of attention from one of the volunteers helping with the session. He was shouting and giving opinions, which distracted other participants, but was not willing to participate in the activity. Additionally, nuisance was created during the second session, by a tree being cut done within a radius of 50 meters. This could have distracted participants and influenced their opinions.

The activities are designed to be accessible for everyone, with a focus on the language used during the session. However, some participants struggled to understand certain concepts or themes or had difficulty ranking them. This issue was partly due to the participants' overall language proficiency and partly because Dutch was not their first language, creating a language barrier. A suggestion for future research is to develop simpler, more visually oriented communication tools, including infographics, diagrams, and visual aids, to convey the concepts and themes. Additionally, offering the possibility to conduct the session in other languages, with translated guiding sheets, instructions, and support materials could help to address the language barrier,

During both sessions, four volunteers were asked to help, by attracting and gathering participants and also guiding the activities. This helped with facilitating multiple participants being able to participate at the same time. Despite thorough information, it was impossible to inform the volunteers perfectly about all the necessary information. This could result in different explanations during the activities or variations in the elaboration of concepts or themes, potentially affecting participants' opinions. A suggestion for future research is to find more volunteers, and possibly organize an information session with the volunteers before the co-creation session, to ensure the volunteers are more thoroughly informed.

Lastly, acquiescence bias may have occurred during the bulletin board activity. Considering some people are more likely to agree with any statement, regardless of what it says (Baxter et al., 2015).

5.8 Conclusion of the co-creation sessions

To collect information about the perspectives of primary stakeholders on UA, the concepts and themes from the explorative interviews were tested during co-creation activities. During the testing, primary stakeholders will indicate if they recognize the distinguished concepts as being drivers or barriers. Additionally, there is a focus on the perceived importance of these concepts and themes, in relevance to each other.

Two low-SES neighborhoods, Tivoli and Doornakkers-Oost, were selected using criteria such as the percentage of unemployed individuals in a neighborhood, the percentage of low-income in a neighborhood, and the percentage of inhabitants with a low educational level in a neighborhood. the co-creation sessions included two main activities: the flagline activity to rank the concepts, and bulletin boards to identify driving and barrier themes.

The results were analyzed using the Borda count and Majority method revealing that both neighborhoods perceived Social and Health as a driving concept. The concept Environmental, is perceived as 'important' in Tivoli and 'unimportant' in Doornakkers-Oost. The perceived relevance of the concept Resources in Tivoli indicates that the theme Time, within Recources is considered a barrier in Tivoli. The perceived relevance of the concept Initiative in Doornakkers-Oost, indicates that it is perceived as a strong barrier.

6 Conclusion & Discussion

This chapter synthesizes the key findings from the research, aligning them with the theoretical frameworks and contextual factors outlined in the earlier chapters. It provides a discussion on some limitations of the research. Additionally, the advantages of the methods used are highlighted. Concluding, reflecting on the distinguished drivers and barriers of both stakeholder groups, recommendations are presented. These recommendations will focus on future UA initiatives, aiming to enhance their effectiveness and sustainability in low-SES neighborhoods.

The current gap consists of a growing urban density, with increased health issues, paved gardens, and societal challenges, such as increased loneliness in cities. This combined with the missing knowledge and awareness about healthy food and lifestyle, and the environmental impact of food production, transportation, and packaging, creates a challenge. Conversely, UA initiatives offer numerous benefits on a personal, environmental, and societal level. Therefore this research focused on identifying the drivers and barriers to the implementation and sustaining engagement with UA, according to primary and secondary stakeholders. The implementation process of UA initiatives includes the following actions: the process of initiation, approval, implementation, creation, or designing of UA initiatives.

Sustaining engagement with UA initiatives includes the following factors: maintenance of the initiatives and their surroundings, maintenance of the participants and their interests, managing resources, sharing knowledge, and promoting ongoing community involvement. This includes multiple stakeholders, such as residents of the neighborhoods, the municipality, neighborhood initiatives, or other groups. In this research, Urban Agriculture is defined as the growing, processing, and distribution of food, at every scale, both within and on the fringe of urban areas, and using and reusing natural resources and urban wastes, for multiple purposes.

In the first phase of the research, explorative interviews were conducted with secondary stakeholders to identify the drivers and barriers they perceive for both implementation and sustaining engagement. Participants were selected using specific criteria, and an interview guide was created to structure the interviews. The results were analyzed using qualitative content analysis, resulting in 394 codes including 167 drivers, and 227 barriers, which could explain the lack of implementation of UA initiatives relevant to the secondary stakeholders. The Concepts Economical, Continuity, and Initiative contained the most barriers, with consecutively, 47, 48, and 52 barriers. The concepts contain 31 themes in total, with the theme Social Cohesion being the largest containing 42 codes. Additionally, the themes Institutional initiative dynamics, Physical space, and Institutional governance have respectively 24, 21, and 21 codes. Therefore, these themes are important and indicate the potential for creating nuanced solutions, to weaken or overcome barriers, or to strengthen drivers.

To collect information about the perspectives of primary stakeholders on UA, the concepts and themes from the explorative interviews were tested during co-creation activities. Two low-SES neighborhoods, Tivoli and Doornakkers-Oost, were selected using criteria such as the percentage of unemployed individuals in a neighborhood, the percentage of low-income in a neighborhood, and the percentage of inhabitants with a low educational level in a neighborhood. The co-creation sessions included two main activities: the flag-

line activity to rank the concepts, and bulletin boards to identify driving and barrier themes. The results were analyzed using the Borda count and Majority method revealing that both neighborhoods perceived Social and Health as a driving concept. The concept Environmental, is perceived as 'important' in Tivoli and 'unimportant' in Doornakkers-Oost. The perceived relevance of the concept Resources in Tivoli indicates that the theme Time, within Recources is considered a barrier in Tivoli. The perceived relevance of the concept Initiative in Doornakkers-Oost, indicates that it is perceived as a strong barrier.

6.1 Comparison results primary and secondary stakeholders

When comparing the drivers and barriers concluded from the research with the primary and secondary stakeholders, similarities and differences can be seen. First of all, it will not be possible to compare the drivers and barriers for implementation and engagement separately, due to the lack of separation in the results of the explorative interviews. Therefore the distinguished drivers and barriers of the primary stakeholders are combined, which is viable due to significant overlap between the drivers and barriers.

The distinguished key driving concepts for the primary stakeholders include Health and Social, and Environmental. Additionally, the distinguished key barrier concepts of the primary stakeholders include Initiative, Social, Economical, and Resources. The distinguished key driving concepts for the secondary stakeholders include Health, Social, and Environmental. Additionally, the distinguished key barrier concepts include Initiative, Economical, Resources, and Continuity.

Similarities can be seen in the drivers. The three key driving concepts for both stakeholders are Health, Social, and Environmental. Regarding the importance of the drivers, Health is perceived as an important driver by both stakeholder groups. The concept Environmental was initially not perceived as 'important', but only specifically for implementation in Doornakkers-Oost. However, the secondary stakeholders predominantly perceive drivers for the concept Environmental. Additionally, for the concept Social the secondary stakeholders predominantly perceive drivers, while the primary stakeholders perceive it both as a barrier and a driving concept.

When looking at the concepts perceived as barriers, Initiative, Economical, and Resources are key barriers for both stakeholder groups. However, for the concept Continuity the secondary stakeholders predominantly perceive barriers, while this concept is not perceived as 'important' or as a barrier for the primary stakeholders.

Overall, the secondary stakeholders perceive more barriers than drivers. Additionally, the primary stakeholders perceive more barriers than drivers when focusing on implementation, and perceive more drivers than barriers when focusing on sustaining engagement.

6.2 Discussion and Synthesis of Findings

In the introduction, multiple benefits of UA are presented, categorized into Environmental, Health, Societal, and Other benefits. All benefits related to environment on a city scale, psychological and physical health, societal aspects, and others, such as education and increased awareness are recognized independently by the secondary stakeholders. The concepts identified during the research are independently structured with a similar layout, as the benefits stated in the introduction, with concepts including Environmental, Social, Health, Resources.

The introduction highlights three factors indicating the potential of low-SES neighborhoods: less money to spend on healthy food, greater health benefits, and predominantly paved gardens in these neighborhoods with low green coverage. Secondary stakeholders also identified financial considerations as potential benefits for these neighborhoods. However, the primary stakeholders did not consider the concept Economical or the relevant theme Financial challenges as 'important'. Both primary and secondary stakeholders recognized Health benefits as drivers to implement UA initiatives.

Regarding the foreseen potential due to the high percentage of paved gardens, interpreting the results is more complex. While secondary stakeholders mentioned the theme Physical space multiple times, 71% of these mentions were perceived as barriers. Primary stakeholders perceived the theme Physical space only once for both the question focused on implementation and engagement, indicating it as less important. This implies that the primary stakeholders have fewer concerns about the lack of space, which is a relevant finding, considering they live in the neighborhoods where the initiatives should be implemented.

Challenges of the current food production system, such as loss of biodiversity, lack of knowledge or awareness of (un)healthy food, and health issues are discussed in the literature chapter. These subjects were perceived multiple times as benefits of UA by secondary stakeholders. Additionally, the concepts covering these subjects were ranked as 'important' or used to elaborate on positive responses by the primary stakeholders, indicating that UA can potentially address these challenges.

The Theory of planned behavior (TPB) was used to shape the conceptual model part of the research model. In this research, the drivers and barriers are distinguished for the primary and secondary stakeholders for the implementation of and engagement with UA. The TPB assumes that behavior results from the intention to engage in specific behavior and that this intention is dependent on three key factors and background factors. The stronger the intention the more likely that you will engage in certain behavior. This can be compared with the drivers and barriers to the implementation of initiatives and engagement with UA. It is assumed that when there are more drivers, or if the drivers are stronger than the barriers, it is more likely that initiatives are implemented or engagement with initiatives will occur.

When the key factors of the TPB are compared with the distinguished drivers and barriers of both stakeholders, there are clear similarities. The key factor perceived behavior control, refers to the perceived ability to perform behavior, including location availability, time, and money. These factors can be similarly seen as distinguished concepts and themes during the research, including Time, Financial considerations, and Physical space. The factor Subjective norm, described as the extent to which a person believes that important others would approve or disapprove of behavior, includes Social norms, which could overlap with the distinguished concept Social. Attitude is defined as reflecting the extent to which engaging in the behavior is evaluated positively or negatively, based on the believed cost of benefits of the behavior, here overlap can be seen with the theme Motivation. Lastly focusing on background factors, which include culture, socio-demographics, education, values, and personal norms. These factors can also be seen in the drivers and barriers distinguished during the research. According to the TPB, stronger intention, dependent on the factors leads to more likely behavior. Due to the distinguished similarities, it is assumed that more or stronger drivers (than barriers)

consisting of the concepts and themes, leads to more likely behavior. Therefore, the perceived barriers should be overcome or reduced, and/or the perceived drivers should be enhanced.

6.2.1 Discussion Explorative interview method

Creating an interview guide for the semi-structured interviews provided a clear structure, which was very helpful for the interviewer. The pilot testing of the interview guide ensured that the questions retrieved answers relevant to the research, particularly regarding the Theory of Planned Behavior (TPB) and implementation and engagement with UA initiatives. This process also ensured that the interviews were kept under 45 minutes while allowing room for elaboration or exploration of new subjects as needed.

Allowing participants to suggest a favorable location ensured a comfortable environment, which encouraged honest answers and opinions. Often, project initiators suggested on-site interviews, which allowed for little tours, experiencing the ambiance, and taking pictures. Thus, providing a better understanding of the day-to-day activities.

Making recordings and minimizing note-taking during the interviews enabled the interviewer to focus on the participants' answers, coming up with relevant follow-up questions, have real conversations, and make the participants feel heard.

6.2.2 Discussion Co-creation method

For the co-creation sessions, the focus was on creating a method that was accessible to everyone. Every aspect of the activities was designed and evaluated by the supervisors of this research and fellow students.

The first aspect that was assigned was the language level, by using language level B1 it was made sure the activity was accessible to all residents with various language levels. The wording and phrases used were assessed multiple times, to ensure the clarity and comprehensiveness of the questions, concepts, and themes. For example terms like "including", "helping with,", "engage in," and "starting of" were carefully considered to ensure the intended meaning was conveyed.

The second aspect is the simplicity of the activities, simplicity was achieved by creating activities that did not contain multiple steps within the activity or needed a long elaboration. Both activities did not need more than five sentences of explanation. To increase the comprehensiveness of the activities, guiding sheets were created, this sheets included a written and visualized explanation and elaborated on the concepts and themes. These were used regularly by participants during the activities.

The third aspect was the visibility of the activity, the sessions in both neighborhoods were dependent on people passing by. This can be separated into two factors, the location of the sessions and the attractiveness of the activities. As described in chapter 5.3.3 the location of the sessions was picked carefully. The sessions were held in public locations, visible from multiple directions, with a flow of foot traffic, close to greenery, a park, a playground, or a square. The second factor is attractiveness, curiosity was created, and attention was attracted by using bright, bold, and playful colors. Next to this, the little vegetable patches helped draw attention and elaborate on the fact the research was about Urban Agriculture, this was achieved by creating little vegetable patches in colorful

crates. This proved to be working, with multiple participants mentioning and asking about the crates. This also made it easier to explain about UA if people were not familiar with it. The word search helped the children with being occupied so parents could participate in the activities.

6.3 Recommendations

Using the results from this research, several recommendations can be made for implementing urban agriculture (UA) initiatives and creating engagement specifically in low-SES neighborhoods.

The concept Initiative is perceived as the most significant barrier, mainly because residents of low-SES neighborhoods do not know how to set up initiatives, where to indicate their interest, or who to contact. This could be linked to the key factor Perceived behavioral control of the TPB. Residents do not perceive the ability to set up an initiative, due to the lack of skills, contacts, and knowledge. To address this factor, and reduce this barrier, collaboration between neighborhood initiatives or the municipality and residents is crucial. When these groups share their knowledge, work together, and therefore reduce the threshold for setting up an initiative. Then the residents may perceive the ability they can start an UA initiative, due to increased intention and behavior. Involving residents in the implementation process helps create a sense of ownership, reducing the likelihood of the initiative deteriorating over time. Additionally, municipalities or neighborhood initiatives could organize educational or playful workshops to raise awareness about healthy nutrition and exercise, demonstrate the ease of setting up initiatives, and highlight the benefits of UA. Clear agreements should be made during the implementation process regarding maintenance, needed guidance and support, and future expectations to avoid disputes.

The results show the importance of focusing on the social aspects of the initiatives. Building initiatives around social interactions can have numerous benefits. When residents work together within the initiatives, they can share tools, knowledge, and produce, which can enhance social bonds, decrease loneliness, and increase the quality of the neighborhood. W Building initiatives around social interactions can have numerous benefits. A sense of ownership and responsibility among residents can also create social surveillance, reducing vandalism, which is a perceived barrier.

While the environment is an important driver for secondary stakeholders, primary stakeholders do not see it as a direct motivator to start an initiative. Therefore, it is essential to promote UA initiatives by highlighting their environmental benefits alongside social and health advantages. By presenting the environment as an additional benefit rather than the primary focus, initiatives like 'Gewildgroei' borders can be implemented to enhance environmental benefits and attract residents who care about the environment but are not necessarily interested in UA.

Overall, the research highlights the importance of understanding the perspectives of different stakeholder groups in the implementation and sustaining of UA initiatives. The findings suggest that targeted strategies addressing both drivers and barriers can enhance the effectiveness and sustainability of UA projects, particularly in low-SES neighborhoods. The study also underscores the significance of community involvement and ownership in UA projects. When residents are actively involved in the design and decision-making processes, there is a greater sense of ownership and commitment to the initia-

tives. This participatory approach not only enhances the relevance and acceptability of UA projects but also ensures their long-term viability by building a strong community foundation.

Moreover, the research identified several limitations, such as the relatively small sample size of participants for both phases of the research, which may not fully capture the diversity of perspectives and experiences within the broader population. The geographical concentration of the study could limit the generalizability of the study. Furthermore, potential selection bias may occur due to snowball sampling. Results of the co-creation sessions may differ due to the use of different research assistants.

All in all, the research highlights several key drivers and barriers specific to UA initiatives. Drivers such as perceived health benefits, social interaction opportunities, and environmental improvements motivate stakeholders to engage with UA projects. Conversely, barriers including lack of knowledge, limited financial resources, and insufficient institutional support hinder the implementation and sustainability of these initiatives. Addressing these barriers through targeted interventions, such as educational workshops, financial incentives, and robust policy frameworks, can significantly improve the success rates of UA projects. By focusing on the unique needs and motivations of each group, and by fostering a collaborative environment, UA projects can effectively contribute to healthier, more sustainable, and socially cohesive urban communities. This research provides a valuable framework for future efforts aimed at promoting urban agriculture and enhancing its impact, particularly in low-SES neighborhoods.

References

Adams, W. (2015, August). *Part two: Practical data collection Procedures. Conducting Semi-Structured Interviews.* John Wiley Sons. https://doi.org/10.1002/9781119171386

Ajzen, I. (2020). The theory of planned behavior: Frequently asked questions. *Human behavior and emerging technologies*, *2*(4), 314–324. https://doi.org/10.1002/hbe2.195

Alsaawi, A. (2014). A critical review of qualitative interviews. *Social Science Research Network*. https://doi.org/10.2139/ssrn.2819536

Amsterdam, G., & de Haan, K.-B. (n.d.). Stadslandbouw. https://maps.amsterdam.nl/stadslandbouw/

Armstrong, D. (2000). A survey of community gardens in upstate New York: Implications for health promotion and community development. *Health and place/Health place (Online)*, *6*(4), 319–327. https://doi.org/10.1016/s1353-8292(00)00013-7

Audate, P. P., Fernandez, M. A., Cloutier, G., & Lebel, A. (2019). Scoping review of the impacts of urban agriculture on the determinants of health. *BMC public health*, *19*(1). https://doi.org/10.1186/s12889-019-6885-z

Baxter, K., Courage, C., & Caine, K. (2015, January). *Chapter 10 - Surveys* (2nd ed.). Morgan Kaufmann. https://doi.org/10.1016/b978-0-12-800232-2.00010-9

Brown, K. H., Carter, A., Bailkey, M., Buchanan, T., Meares-Cohen, A., Mann, P., Nasr, J., & Smit, J. (2003, October). *Urban Agriculture and Community Food Security in the United States: Farming from the City Center to the Urban Fringe* (tech. rep.). www.foodsecurity.org

Buecker, S., Mund, M., Chwastek, S., Sostmann, M., & Luhmann, M. (2021). Is loneliness in emerging adults increasing over time? A preregistered cross-temporal meta-analysis and systematic review. *Psychological Bulletin*, *147*(8), 787–805. https://doi.org/10.1037/bul0000332

Butler, L. M., Maronek, D. M., for Agricultural Science, C., & Technology. (2002, May). *Urban and agricultural communities: opportunities for common ground.*

Cavallini, S., Soldi, R., Friedl, J., & Volpe, M. (2016). *Part One: Literature review.* European Committee of the Regions. https://doi.org/10.1002/9781119171386

CBS. (2021). *Internationaliseringsmonitor Handel en milieu 2021-II* (tech. rep.). Centraal Bureau voor de Statistiek. www.cbs.nl

de Snoo, M., G.R. Vijver. (2012, January). *Bestrijdingsmiddelen en waterkwaliteit.* Universiteit Leiden - Centrum voor Milieuwetenschappen (CML).

De Muynck, A. (2011, July). *Stadslandbouw en duurzame gebiedsontwikkeling* (tech. rep.). Erasmus Universiteit Rotterdam, Stadsontwikkeling Rotterdam, Technische Universiteit Delft. https://thesis.eur.nl/pub/10369/0715_MCD7_Arienne%20de%20Muynck.pdf

Devaux, M., Sassi, F., Church, J., Cecchini, M., & Borgonovi, F. (2011). Exploring the relationship between education and obesity. *Oecd Journal: Economic Studies*, *2011*(1), 1–40. https://doi.org/10.1787/eco\{_}studies-2011-5kg5825v1k23

Duchemin, E., Wegmuller, F., & Legault, A.-m. (2009). Urban agriculture: multi-dimensional tools for social development in poor neibourghoods. *Field actions science reports*, *2*(1), 1–8. https://doi.org/10.5194/facts-2-1-2009

Eindhoven-in-cijfers, G. (2024). *Eindhoven in cijfers.* Retrieved June 6, 2024, from https://eindhoven.incijfers.nl/jive

Estabrooks, P. A., Lee, R. E., & Gyurcsik, N. C. (2003). Resources for physical activity participation: Does availability and accessibility differ by neighborhood socioeconomic status? *Annals of Behavioral Medicine*, *25*(2), 100–104. https://doi.org/10.1207/s15324796abm2502\{_}05

Fraters, B., Hooijboer, A., & Vrijhoef, A. (2016). *Landbouwpraktijk en waterkwaliteit in Nederland; toestand (2012-2014) en trend (1992-2014)* (tech. rep. No. M/250030). Rijksinstituut voor Volksgezondheid en Milieu. www.rivm.nl

Galvin, R. (2015). How many interviews are enough? Do qualitative interviews in building energy consumption research produce reliable knowledge? *Journal of building engineering*, *1*, 2–12. https://doi.org/10.1016/j.jobe.2014.12.001

Goldstein, B., Hauschild, M., Fernández, J., & Birkved, M. (2016). Urban versus conventional agriculture, taxonomy of resource profiles: a review. *Agron. Sustain. Dev.*, *36*, 9–. https://doi.org/10.1007/s13593-015-0348-4

Grebitus, C., Chenarides, L., Muenich, R., & Mahalov, A. (2020). Consumers' Perception of Urban Farming—An Exploratory Study. *Frontiers in sustainable food systems*, *4*. https://doi.org/10.3389/fsufs.2020.00079

Grimble, R., & Wellard, K. (1997). Stakeholder methodologies in natural resource management: a review of principles, contexts, experiences and opportunities. *Agricultural Systems*, *55*(2), 173–193. https://doi.org/10.1016/s0308-521x(97)00006-1

Habibipour, A., Ståhlbröst, A., Zalokar, S., & Vaittinen, I. (2020, July). *Living lab handbook for urban living labs developing nature-based solutions* (tech. rep.). https://unalab.eu/system/files/2020-07/living-lab-handbook2020-07-09.pdf

Hoes, A.-C. (2018). Voedselsysteeminnovatie: Kansen voor een duurzamer en gezonder nederland [Project number: 2282100265]. https://doi.org/10.18174/456111

Howard, E., & Butlin, F. M. (1899). To-morrow: a peaceful path to real reform. *The economic journal/Economic journal*, *9*(33), 71. https://doi.org/10.2307/2956739

Jain, N. (2021). Survey versus Interviews: Comparing data collection Tools for Exploratory research. *The qualitative report*. https://doi.org/10.46743/2160-3715/2021.4492

Johnson, N. A., Sultana, R. N., Brown, W. J., Bauman, A. E., & Gill, T. (2021). Physical activity in the management of obesity in adults: A position statement from Exercise and Sport Science Australia. *Journal of science and medicine in sport*, *24*(12), 1245–1254. https://doi.org/10.1016/j.jsams.2021.07.009

Kallio, H., Pietilä, A.-M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing*, *72*(12), 2954–2965. https://doi.org/10.1111/jan.13031

LNV. (2010). Thema Biodiversiteit.

Lovell, S. T. (2010). Multifunctional Urban Agriculture for Sustainable Land Use Planning in the United States. *Sustainability*, *2*(8), 2499–2522. https://doi.org/10.3390/su2082499

Mougeot, L. J. A. (2006, January). *Growing better cities*. https://practicalactionpublishing.com/book/943/growing-better-cities

Mukherji, N. (2009). THE PROMISE AND THE PITFALLS OF MUNICIPAL POLICY FOR URBAN AGRICULTURE.

National-geographic. (n.d.). Rural Area. https://education.nationalgeographic.org/resource/rural-area/

Parker, C., Scott, S., & Geddes, A. (2019). Snowball sampling. https://doi.org/10.4135/9781526421036831710

Polit, C. T., Denise F. Beck. (2013, June). *Essentials of Nursing Research: Appraising evidence for nursing practice.* http://fhu.librarygh.net/index.php?p=show_detail&id=1433

Rigolon, A., Browning, M. H. E. M., McAnirlin, O., & Yoon, H. V. (2021). Green Space and Health Equity: A systematic review on the potential of green space to reduce health disparities. *International journal of environmental research and public health/International journal of environmental research and public health*, *18*(5), 2563. https://doi.org/10.3390/ijerph18052563

RIVM. (2012). *Percentage metabool syndroom, naar leeftijd en geslacht* (tech. rep.). Rijks Instituut voor de Volksgezondheid en Milieu.

Ruijtergaard – Stichting Amstergaard. (n.d.). https://amstergaard.nl/gaarden/ruijtergaard/

Santiago, C. D., Wadsworth, M. E., & Stump, J. (2011). Socioeconomic status, neighborhood disadvantage, and poverty-related stress: Prospective effects on psychological syndromes among diverse low-income families. *Journal of Economic Psychology*, *32*(2), 218–230. https://doi.org/10.1016/j.joep.2009.10.008

Sarsani, M. R. (2011, January). *Socio-Economic status and performance on creativity tests.* https://doi.org/10.1016/b978-0-12-375038-9.00179-5

Scheer, F., Groot, J., Snels, J., & Simons, A. (2011, January). *Verduurzaming voedselproductie : transportbewegingen van het Nederlandse voedsel* (tech. rep.). Wageningen UR Food Biobased Research. http://edepot.wur.nl/178006

Sloven, R. (2019, October). Veel tuinen in Nederland zijn 'versteend'. Zo zit dat in Eindhoven. https://indebuurt.nl/eindhoven/gemeente/veel-tuinen-in-nederland-zijn-versteend-zo-zit-dat-in-eindhoven~90736/

Smit, J., Nasr, J., & Ratta, A. (n.d.). *Urban Agriculture yesterday and today* (2001 Edition, tech. rep.).

Springmann, M., Clark, M., Rayner, M., Scarborough, P., & Webb, P. (2021). The global and regional costs of healthy and sustainable dietary patterns: a modelling study. *The Lancet Planetary Health*, *5*(11), e797–e807. https://doi.org/10.1016/s2542-5196(21)00251-5

Ståhlbröst, A., Habibipour, A., Chronéer, D., Vaittinen, I., Zalokar, S., Mafe, C., ULL, U., of Technology, L. U., & ENoLL. (2018, February). *UNALAB ULL Framework* (tech. rep.).

Steg, L., & De Groot, J. (2019). *22 Theories to Explain Environmental Behaviour* (Second Edition). Wiley. https://doi.org/10.1002/9781119241072

Sun, L., Chen, J., Li, Q., & Huang, D. (2020). Dramatic uneven urbanization of large cities throughout the world in recent decades. *Nature communications*, *11*(1). https://doi.org/10.1038/s41467-020-19158-1

Tamer, M. G. (2022, April). EXPLORING THE POTENTIAL ROLE OF URBAN AGRICULTURE AS a COMMUNITY ENGAGEMENT STRATEGY IN UNIVERSITIES DURING a FOOD SECURITY CRISIS: THE AMERICAN UNIVERSITY OF BEIRUT AS a CASE STUDY.

UNDP. (1996). *Urban agriculture: food, jobs and sustainable cities* (Vol. 34). https://doi.org/10.5860/choice.34-6355

van Binnenlandse Zaken en Koninkrijksrelaties, M. (2019). Leefaabrometer FAQ. https://www.leefbaarometer.nl/page/FAQ#hoegemeten

van Galen, I. (2022, May). Volkstuinen enorm in trek: jarenlange wachtrij voor wie groente wil kweken. https://www.omroepbrabant.nl/nieuws/4085324/volkstuinen-enorm-in-trek-jarenlange-wachtrij-voor-wie-groente-wil-kweken

Veen, E., Mul, M., Praktijkonderzoek Plant Omgeving, G. r. e. V., onderdeel van Wageningen UR Business Unit Akkerbouw, & (DLO), S. D. L. O. (2010, August). *Stadslandbouw* (tech. rep.).

Vink, M., Boezeman, D., & voor de Leefomgeving, P. P. (2018, July). *Naar een wenkend perspectief voor de Nederlandse landbouw*. PBL Planbureau voor de Leefomgeving.

Von Thünen, J. H., Wartenberg, C. M., & Hall, P. (1966, January). *Von Thünen's Isolated state : an English edition of Der Isolierte Staat*. http://ci.nii.ac.jp/ncid/BA18622194

voor Ondernemend Nederland, R. (2016, June). *De Nederlandse landbouw en het klimaat* (tech. rep. No. RVO-075-1601/BR-DUZA). In opdracht van het ministerie van Economische Zaken.

voor de Statistiek, C. B. (2023, September). Opleidingsniveau. https://www.cbs.nl/nl-nl/nieuws/2019/33/verschil-levensverwachting-hoog-en-laagopgeleid-groeit/opleidingsniveau

Wasserman, C. R., Shaw, G. M., Selvin, S., Gould, J. B., & Syme, S. L. (1998). Socioeconomic status, neighborhood social conditions, and neural tube defects. *American Journal of Public Health*, *88*(11), 1674–1680. https://doi.org/10.2105/ajph.88.11.1674

WRR. (2014, February). *Naar een voedselbeleid* (tech. rep.). Wetenschappelijke Raad voor het Regeringsbeleid.

Zhang, G., & He, B.-J. (2021). Towards green roof implementation: Drivers, motivations, barriers and recommendations. *Urban Forestry Urban Greening*, *58*, 126992. https://doi.org/10.1016/j.ufug.2021.126992

A Appendix: Case study

This appendix shows the elaboration on the case study performed during the literature review.

Table 21: Case study, part 1

Name initiative	Initiator	Where	Location	Intention	Goal	Societal approach
Stadsakkers Eindhoven	Alderman municipality Eindhoven	Eindhoven	Fringe	Farming crops to make food packages for the 'Voedselbank' for people and families living under the poverty line	Main goal is producing food, but this food is specifically for societal organisations	Yes, produces food for societal organisations
Stichting Amstergaard	Founding	Amsterdam	Center	Create a 'chain' of little food forests, with small green oases through the city, work together with neighbors and companies	Both, goal is creating green oasises with edible plants	No
Anna's tuin & ruigte	Founding	Amsterdam (science park)	Fringe	Applying permaculture design system to create a sustainable environment in the city, with a high biodiversity and healthy foodproduction. Organize educative activities.	Both, goal is creating a sustainable environment for humans, animals and plants.	Yes, organizes practical and educational activities, where people can learn about skills and knowledge, and is a green meetingspot
Wasven	Action group of a neighborhood	Eindhoven	Fringe	Producing halthy food for the restaurant and people who want it on a place where they include and guide everybody	Both, focussed on greening and foodproduction	Yes, they have working opportunities for people with care needs, which offer structure and social interaction, also offers educational activites
Vivaldituin	Individual	Eindhoven	Fringe	Farming crops and bringing people together, and some education	Foodproduction	Yes, it also focusses on bringing people (and groups) together in the neighborhoods
Het voedselbos Eindhoven	Individual	Eindhoven	Fringe	residents of Eindhoven can get used to a healthy lifestyle, by working together and learning inside of the foodforest, or learning how to create this on other spots, but also cooking together and other activities	Foodproduction, no direct goal of greening	Yes, working together is key

Table 22: *Case study, part 2*

Name initiative	**Initiator**	**Where**	**Location**	**Intention**	**Goal**	**Societal approach**
Phood Farm	Group who created founding	Eindhoven	center	Sustainable food production for local end consumer, have spots for people with a distance to the labor market, and daytime activities	Foodproduction	Yes, offer reintegration help, spots for people with a distance to labor market, and daytime activities
VBAZO (voedselbos Amsterdam Zuidoost)	municipality	Amsterdam	Fringe	Residents can participate in designing the environment, meet others for better social cohesion, educate about nature, and collect free fruit, flowers and edible plants and nuts. VBAZO connects multiple green zones, enlarge biodiversity.	Greening, with a bit of foodproduction	yes, offers the possibility to meet neighbours by harvesting biological produce, improves social cohesion
Stadstuinderij Noordoogst	Individual	Amsterdam	Fringe	Can buy a vegetable-subscription, so you can pick fresh vegatables and fruits each week	Foodproduction	No
Buurttuin Jacob Krausstraat	group from neighbor-hood	Amsterdam	Fringe	Turn over the 'wasteland' to public location with environment enhancements, a kitchen garden and verticle growth	Both	Not intentionally

B Appendix: "Leefbaarometer"

This appendix shows information about the three concepts distinguishing low-SES neighborhoods, and the dimensions used in the "Leefbaarometer" and the weighing of these dimensions (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2019)

In the Netherlands, some concepts describe neighborhoods that resemble low-SES neighborhoods, such as "Vogelaarswijken', established by Minister Vogelaar (Kamerstukken II 2006/07, 30995, nr.1, p. 2). There are 40 "Vogelaarswijken", including Dutch neighborhoods that have cumulative physical, social-economical, and social-cultural issues. However, the methodology used to select and distinguish the neighborhoods is untraceable. Even though three of these neighborhoods are located in Eindhoven, they are considered outdated because they were distinguished in 2007.

Furthermore, the "Grotensteden beleid" employs 18 indicators to differentiate 140 focus neighborhoods in the Netherlands ("Aandachtswijken"). Once more, the selection methods are untraceable (Kamerstukken II 2006/07, 30995, nr.1, p. 2). Additionally, the "Leefbaarometer" was assessed, a tool created by the Dutch Ministry of Internal Affairs, assessing the livability of neighborhoods within the Netherlands on a small scale (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2019). This examination is based on five dimensions: housing stock, physical environment, facilities, social cohesion, and nuisance and unsafety. However, the two dimensions most relevant for this research about UA, the physical environment, and social cohesion, weigh the least within the calculation of livability (Appendix B). These two dimensions focus on factors most relevant to UA initiatives. Therefore, the "Leefbaarometer" does not directly seem relevant for selecting the low-SES neighborhoods for this research. To conclude, these three tools are incomplete, or not suited for selecting the low-SES neighborhoods and will therefore not be used.

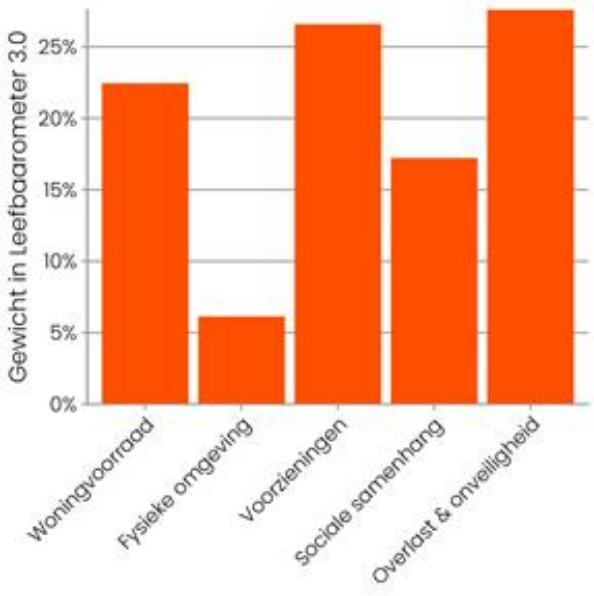


Figure 18: *Weighing of dimensions of the "Leefbaarometer"*

B Appendix: "Leefbaarometer"

Omgevingskenmerken Fysieke omgeving	
Natuurlijke omgeving	*Infrastructuur*
Luchtkwaliteit	Nabijheid (doorgaande) wegen
Geluidsbelasting	Nabijheid railinfrastructuur
Niet-ioniserende straling	Verkeersveiligheid
Gevoelstemperatuur/hittestress	Autodichtheid
Wateroverlast	Nabijheid windturbines
Grondwateroverlast/bodemdaling	Nabijheid hoogspanningsmasten
Aardbevingen	Kwaliteit wandel- en fietspaden
Overstromingsdiepte	Functiemenging
Nabijheid van bos/groene ruimte	Leegstand niet-wonen vastgoed

Omgevingskenmerken Fysieke omgeving	
Natuurlijke omgeving	*Infrastructuur*
Luchtkwaliteit	Nabijheid (doorgaande) wegen
Nabijheid landschap aantrekkelijk voor recreatie	Beloopbaarheid
Variatie aan landschappen	

Figure 19: *Dimmension "Leefbaarometer": Environment*

Omgevingskenmerken Sociale samenhang
(Diversiteit naar) levensfase
Sociale cohesie
Mutatiegraad
Dichtheid aan inwoners
Bevolkingsontwikkeling

Omgevingskenmerken Voorzieningen
(Openbaar) vervoer
Winkels/detailhandel
Onderwijs
Zorg en ondersteuning
Horeca/ontmoeting
Vrije tijd, cultuur, e.d.
Sportaccommodaties
Baanbereikbaarheid

Figure 20: *Dimmensions "Leefbaarometer": Social cohesion & Facilities*

Omgevingskenmerken Overlast en onveiligheid
Geregistreerde misdrijven
Ervaren veiligheid
Ervaren overlast

Omgevingskenmerken Woningvoorraad	
Woningleegstand	Dichtheid van de bebouwing
Funderingsproblemen (paalrot)	Menging van eigendomsverhoudingen
Energetische kwaliteit	Eigenwoningbezit
Specifieke slecht onderhouden segmenten (eigendom, waarde)	Eigenwoningbezit i.r.t onvoldoende inkomen
Gebruik van zonnepanelen	Aandeel monumentale woningen
Renovaties van woningen (o.b.v. proxy energetische kwaliteit)	Overbewoning
Woningtypen (grootte, bouwjaar, type, hoogte)	

Figure 21: *Dimmensions "Leefbaarometer": Nuisance and unsafety & Housing stock*

C Appendix: Recruitment of participants explorative interviews

This appendix shows the e-mail templates for the recruitment of the participants for the explorative interviews. The first e-mail is focused on initial contact, which is more informative, while the second is focused on scheduling an appointment. Lastly, the informative text is shown which was shared by the supervisors to facilitate contact.

C.1 1st Invitation secondary stakeholder (English)

Dear,

This study is conducted for the master thesis of Hilde Heemskerk, a master student of the Technical University of Eindhoven. For this study I would like to invite you to an interview which focusses on Urban Agriculture (UA). Urban Agriculture is the integration of growing and cultivating of diverse crops into the urban environment, to benefit personal health, the environment and community development. Your expertise and/or experience in [specific for each stakeholder] makes your input highly valuable to the study.

Literature suggests UA offers plenty of benefits, so the goal of this research is to seek understanding which drivers and barriers influence the implementation of, and creation of engagement with Urban Agriculture, through an interview. In this research contains two rounds of interviews, one round with experts (you), and one round with the primary stakeholders (the residents of certain neighborhoods), this round will be based on the first round of interviews. This information will result in policy and intervention proposals, which utilizes the drivers and help overcome the barriers. The focus in this study lies on small scale UA, especially in low-Socioeconomical status (low-SES) neighborhoods. Low-SES neighborhoods: are neighborhoods which score low on e.g. wealth (income), occupation, and- educational level.

Your expertise is incredibly valuable. If you are interested, please reply to this e-mail, so we can plan a moment for the interview, and I can provide you with some more information. Thank you for your time and consideration.

Sincerely,

Hilde Heemskerk
Master student
Eindhoven University of Technology
+31 6 2015 2974 - h.h.m.heemskerk@student.tue.nl

C.2 1st Invitation secondary stakeholder (Dutch)

Beste lezer,

Deze studie wordt uitgevoerd voor de master thesis van Hilde Heemskerk, een masterstudente aan de Technische Universiteit van Eindhoven. Voor dit onderzoek zou ik u graag willen uitnodigen voor een interview die zich richt op stedelijke landbouw. Stedelijke landbouw is het integreren van, het groeien en verbouwen van diverse gewassen in de stedelijke omgeving, ten gunste van de persoonlijke fysieke en mentale gezondheid, het milieu en gemeenschapsontwikkeling. Uw expertise en/of ervaring met [vul hier specifieke informatie per stakeholder in] maakt uw inbreng zeer waardevol voor dit onderzoek.

Uit literatuur blijkt dat stedelijke landbouw een tal aan fysieke en mentale voordelen biedt. Daarom wordt er in dit onderzoek wordt gezocht naar de drijfveren en barrières van de implementatie en betrokkenheid van stedelijke landbouw, door middel van een interview van ongeveer 45 minuten. Dit onderzoek bestaat uit twee rondes met interviews. De eerste ronde waarin experts worden ondervraagd (u), en de tweede ronde met de primaire belanghebbende (de bewoners van specifieke buurten). Deze tweede ronde zal gebaseerd zijn op de resultaten van de eerste ronde. Deze informatie zal worden verwerkt in beleids- en interventievoorstellen, deze zullen de drijfveren gebruiken en versterken en zullen helpen de barrières te overwinnen. De focus in deze studie ligt op kleinschalige stedelijke landbouw, vooral in wijken met een lage socio-economische status (low-SES). Kleinschalig om de groottebeperking van potentiële ruimtes te verminderen, en buurten met een lage socio-economische status worden getypeerd, door buurten waar de inwoners bijvoorbeeld laag scoren op welvaart (inkomen), beroep en onderwijsniveau.

Uw expertise zou erg waardevol zijn voor dit onderzoek. Als u geïnteresseerd bent om mee te doen aan dit onderzoek, antwoord dan op deze e-mail, zodat wij een afspraak kunnen inplannen om een interview af te nemen en dan zal ik u verder u voorzien van meer informatie. Bedankt voor uw tijd en overweging.

vriendelijke groet,

Hilde Heemskerk
Master student
Technische Universiteit van Eindhoven
+31 6 2015 2974 - h.h.m.heemskerk@student.tue.nl

C.3 2nd invitation secondary stakeholders (English)

Dear,

Thank you for your reply and interest in this research, participation would involve an interview, lasting around 30-45 minutes, at a time and place of your convenience. The interview will be semi-structured, allowing for an open and conversational style. Participation is completely voluntary and anonymous, and the data will be treated with the strictest confidentiality.

The goal of this explorative interview is creating a comprehensive summary of the current state of Urban Agriculture, including state-of-the-art knowledge, experience and opinions towards Urban Agriculture through the lens of diverse professional stakeholders. The aim of the interviews is to establish the current drivers and barriers influencing the implementation of and engagement with Urban Agriculture. In this study we focus especially on low-SES neighborhoods.

I have two questions which hopefully make it easy to make an appointment for the interview:

1. I suggest the following data's, could you please indicate which one would suits you best:
   (a) - [dag] [datum] [tijdsblok (9:00- 12:00) of (12:00-15:00) of (15:00-17:00)]
   (b) - [dag] [datum] [tijdsblok (9:00- 12:00) of (12:00-15:00) of (15:00-17:00)]

   (c) - [dag] [datum] [tijdsblok (9:00- 12:00) of (12:00-15:00) of (15:00-17:00)]

   (d) - I suggest another day: DD-MM-YYYY on this time:

2. Next to this could you indicate which location you would prefer for the interview.

If you require any further information about the research or your involvement, do not hesitate to reach out.

Sincerely,

Hilde Heemskerk
Master student
Eindhoven University of Technology
+31 6 2015 2974 - h.h.m.heemskerk@student.tue.nl

C.4 2nd invitation secondary stakeholders (Dutch)

Beste,

Bedankt voor uw reactie en interesse in dit onderzoek. Deelname aan dit onderzoek bestaat uit een interview van ongeveer 30-45 minuten op een tijd en plaats die voor u het beste uitkomt. Het interview zal semi-gestructureerd zijn, wat inhoud dat er vaste vragen zijn, maar er ook ruimte is voor uitleg van antwoorden en een open conversatie. Deelname aan dit onderzoek is volledig vrijwillig en anoniem, en de gegevens zullen met de strengste vertrouwelijkheid worden behandeld.

Het doel van dit verkennende interview is het creëren van een uitgebreide samenvatting van de huidige staat van stedelijke landbouw, inclusief state-of-the-art kennis, ervaringen en meningen over stedelijke landbouw, vannuit het perspectief van verscheidende belanghebbenden. De resultaten van de vragen zijn de huidige drijfveren en barrières, die de implementatie van en betrokkenheid bij stedelijke landbouw beïnvloeden.

Ik heb twee vragen die het makkelijk zullen maken om een afspraak te maken voor het interview:

1. Ik stel de volgende data voor, kunt u aangeven welke het beste uitkomt:

   (a) - [dag] [datum] [tijdsblok (9:00- 12:00) of (12:00-15:00) of (15:00-17:00)]

   (b) - [dag] [datum] [tijdsblok (9:00- 12:00) of (12:00-15:00) of (15:00-17:00)]

   (c) - [dag] [datum] [tijdsblok (9:00- 12:00) of (12:00-15:00) of (15:00-17:00)]

   (d) - Ik stel een zelf een andere datum en tijd voor, namelijk:

2. Kunt u een locatie aangeven die uw voorkeur heeft om het interview te houden?

Mocht u verdere informatie nodig hebben over het onderzoek of uw betrokkenheid, aarzel dan niet om contact op te nemen. Bedankt voor uw tijd en overweging.

Met vriendelijke groet,

Hilde Heemskerk
Master student
Technische Universiteit van Eindhoven

+31 6 2015 2974 - h.h.m.heemskerk@student.tue.nl

C.5 Text for recruitment facilitated by supervisors

Deze studie wordt uitgevoerd voor de master thesis van Hilde Heemskerk, een masterstudente aan de Technische Universiteit van Eindhoven. Voor dit onderzoek zou ik u graag willen uitnodigen voor een interview die zich richt op stedelijke landbouw. Stedelijke landbouw is het integreren van, het groeien en verbouwen van diverse gewassen in de stedelijke omgeving, ten gunste van de persoonlijke fysieke en mentale gezondheid, het milieu en gemeenschapsontwikkeling. In dit onderzoek wordt er gezocht naar de drijvende krachten en beperkende factoren die aanwezig zijn bij het implementeren van, en de betrokkenheid bij Stadslandbouw. Uw expertise zou erg waardevol zijn voor dit onderzoek.

D Appendix: Rough analysis

Participant 1

	Driver	Barrier	Other
Economical		- De impact van stadslandbouw is lastig te meten --> dus waarom niet kiezen voor een project wat duidelijker impact heeft - Mensen enthousiasmeren en aan tafel krijgen kost veel werk en geld - Waarom moet het juist in zulke wijken, waarom moeten ze meedoen aan een gemeenschappelijke moestuin, terwijl ze al in een kleiner huis wonen met kleine/geen tuin, is dit de beste manier om het beter te maken voor hun om daar te leven	- Gemeentes moeten niet alleen focussen op woningen, maar ook ruimte creeeren voor groene initiatieven - Als gemeente laten zien: wij vinden gezond eten belangrijk en ondersteunen die --> kruiden bakken aan lantaarnpalen - Gezonde producten goedkoop maken in de supermarkt - Oplossingen moeten integraal worden aangepakt, dat gebeurd nu niet en daarom werken dit soort initiatieven nu vaak niet - Herenboeren --> Boer is kartrekker --> andersom gedacht --> hierin een ingang creeren (subsidie) zodat mensen uit deze wijken kunnen meedoen - Verplaatst naar initiative
Social	- Stadslandbouw kan als (bind)middel worden gebruikt om een community te creëren - Sociale contacten opbouwen - Het is sociaal geaccepteerd	- Een 'Koloniaal' gevoel, 'wij' (professionals) weten wat beter is voor jou (buurtbewoner) --> niet van 'bovenaf' aangeven: dit moet je doen want het is goed voor je - Het is gewoon moeilijk om mensen werkelijk te veranderen	- Regel eerst maar dat er meer park is, meer recreatie ruimte, meer hangplek voor jongeren - Verplaatst naar Initiative
Resources		- Ruimte gebrek - we vechten met zijn allen voor ruimte in de steden - Tijdsgebrek - Er is geen 'ruimte' om de kennis die bewoners misschien al wel hebben te gebruiken - Wie doet het onderhoud - Geld - De visie op dat dit (UA) belangrijk is - Expertise in wat waar wel of niet groeit - Educatief kan een doel zijn, maar niet belerend, want dat belerende, dat werkt gewoon niet, iedereen weet het beter voor de ander, maar het is gewoon een leuk moment bij elkaar	- Woningcorporaties zouden misschien dingen kunnen aanbieden - Verplaatst naar Continuity - Verplaatst naar Economical
Health	- Een manier leren om met je eten om te gaan - Mensen laten zien waar producten vandaan komen	- Uit onderzoek komt, dat als je schulden hebt, je weinig ruimte hebt om gezonde keuzes te maken - dus geen 'ruimte' om bij te dragen aan zo'n soort project - Het aanpakken van gezond gedrag en gezond eten in dit soort wijken is ingewikkeld	"wat echt een groot probleem is in laag-SES wijken, dat adviesbureaus worden ingehuurd, om ff onderzoek te doen, over waarom is de levensverwachting hier lager, en waarom eten mensen hier veel ongezonder, en is obesitas hoger. Hier komt altijd uit, ze eten te ongezond, want ze weten niet wat wel gezond is. Dus ze maken niet de goede keuzes, want ze hebben niet genoeg kennis. Wat er dan, er komen altijd vrouwen met witte sneakers vertellen, het ligt aan het onderwijs, het begint bij de kinderen, we moeten de kinderen leren wat gezond is. Wat doen ze dan, ze gaan met een broccoli voor de klas zijn, joehoe, dit is gezond, dit moeten jullie eten, waarom eten jullie dit niet. Maar dan ga je er helemaal voorbij aan het feit, dat de helft van die klas niet eens ontbijt heeft gehad."
Initiative		- Wie moet het gaan onderhouden - Wie moet het gaan organiseren - dezelfde mensen zijn altijd vrijwilligers op verschillende plekken --> dus moeilijk om nieuwe mensen te bereiken - Het moet vannuit intrinsieke motivatie komen --> niet opleggen aan mensen - Je hebt externe kartrekkers nodig en die kosten veel geld	- Omdat het iets nieuws is waar je geen beeld hebt heb je mensen nodig dit trekken - Verplaatst naar continuity
Continuity		- Mensen blijvend betrokken houden is lastig, je hebt een harde kern nodig, die er aan trekt - Wanneer een organisatie betrokken is, en deze mensen verliezen interesse, dan valt het uit elkaar --> Bijvoorbeeld iemand van de gemeente die het wel belangrijk vind wordt opgevolgd door iemand die het niet belangrijk vind --> geen continuiteit vannuit de gemeente blokkeert de vooruitgang - Initiatieven (zoals bistro stronk en schil) zijn leuk, maar zodra de kartrekkers uit de wijk trekken houdt het vaak ook op	-
Environmental	- Meer groen - Meer eten van dichtbij --> lokaal produceren		
Culture			

Figure 22: *Rough analysis of the interview with the participant 1*

D Appendix: Rough analysis

Participant 2

	Driver	Barrier	Other
Economical	- Mensen met een minimum (inkomen) proberen zo goedkoop mogelijk zelf groenten te kweken - Buurtcultuurfonds betaald veel sociale activiteiten		
Social	- Ontmoetingsplek - Activiteiten plek - Samen 'iets doen' met de oogst - Meer contacten - Sociale binding krijgen - Nabuurschap - Combinatie met muziek - Laagdrempelige en 'vrije' verbinding - Samenkomst van meerdere buurt initiatieven (elkaar in stand houden en versterken (volksdansgroep)) - Goed voor de sfeer	- Gebrek aan vrijwilligers of initiatiefnemers - Je hebt liever niet mensen 'van alles weghalen' --> vandalisme?	- Sommige volkstuintjes meer bezig met echt de productie van groentes, andere tuintjes gaan meer om het hebben van sociale contacten (misschien iets teveel, en te weinig getuinierd), dus het sociale voordeel licht wel aan het soort tuin
Resources	- Kennis/educatie over waar voedsel vandaan komt, het proeven ervan (kinderen) - Begeleiding en kennis goed te vergaren (Velt, Boekwerken, kennis van andere)	- Een geschikte plek - Nier genoeg kennis - Mensen hebben geen tijd meer - Sommige mensen hebben liever pakeerplaatsen - Moeite die je erin steekt versus het uiteindelijke resultaat	- Kennis, maar dat valt allemaal te leren
Health	- Gezond eten, om ziektes te voorkomen - Leuk om te doen en interessant?	- Er zijn mensen die wel willen helpen, maar fysiek niet in staat zijn	- Mensen eten ongezonder dan ze zouden moeten --> door gemakszucht
Initiative	- Ondersteuning van de ontwerper --> Social design project	- De meeste mensen weten niet, dat je met een goed plan, een stuk grond van de gemeente mag gebruiken - Mensen moeten met eigen initiatief komen - Kartrekkers nodig	- Genoeg mensen die zeggen, ik wil mijn eigen groente gaan verbouwen, maar daar blijft het bij - Eigen initiatief door deze buurtbewoner, hij wilde een betere wijk met UA en meer sociale contacten --> met gemeente, Woonbedrijf, welzijnswerk en CKE om tafel gaan zitten
Continuity	- Extern project van 4W, die hulp biedt --> initiatief van Woonbedrijf, de gemeente, Ergon en Archipel (mensen met afstand tot de arbeidsmarkt)	- Initiële deelnemers, verhuizen, overlijden - Initiële begeleiders warden overgenomen en hebben geen interesse - Woonbedrijf had veel initiatieven --> maar zodra er geen begeleiding meer was, gebeurde het ook niet meer	
Network	- De gemeente is blij dat ik een stukje onderhoud doe	- Genoeg mensen bij elkaar vinden (5 nodig om een contract met de gemeente af te sluiten) (draagvlak) - De juiste contacten hebben	- - Had al een groot netwerk --> stad van morgen - Je moet krachten bundelen (samenwerking met groene huurders, WijEindhoven) - Alma (de ontwerper) heeft erg geholpen met de contact richting de gemeente
Environmental	- Dicht bij de natuur staan - Stimuleert biodiversiteit --> Je ziet hoeveel insecten en vogels eropaf komen - Katten voelen zich helemaal thuis - Mensen bewuster van de omgeving kunnen laten zijn	- Verstoringen: teveel regen, te droog, duiven die je kool opeten, Ratten, Slakken, en 'andere plagen' - Mensen zijn bang voor de 'beestjes' die het meebrengt	
Culture	- Er wordt rekening gehouden met iedereen (halal en vegan eten tijdens activiteiten) en niemand heeft hier problemen mee		- Mevrouw uit Afghanistan die zei: Wij hebben vanuit ons land de gewoonte om voor 7 huizen links en voor 7 huizen rechts voor elkaar te zorgen - Een andere buurvrouw, dat is een vrouw alleen met 3 dochters. Die mag niet zomaar bij mij aanbellen, maar als ik in de buurtuin aan het werk ben kunnen we elkaar wel aanspreken

Figure 23: *Rough analysis of the interview with the participant 2*

D Appendix: Rough analysis

Participant 3

	Driver	Barrier	Other
Economical	- Als initiatiefnemers er al zijn om te kijken wat voor planten waar zouden moeten staan, en ze gaan toch al planten aanplanten, en ze leveren het aan en wijken gaan hiermee zelf aan de slag zou het de gemeente niet veel kosten	- Van 'hoger af' (de gemeente) vonden ze groen nooit zo belangrijk, groen is altijd bijzaak geweest - Initiateven mogen niet 'teveel' kosten - De gemeente heeft aparte afdelingen en die werken niet samen (groen en sociaal) dat houdt verbetering van het grotere geheel tegen - Het kost heel veel energie om een kleine verandering door te voeren zoals, minder maaien - Sommige mensen bij de gemeente doen gewoon hun baan en zien groen niet zitten, of hebben 100 andere dingen te doen, dan gebeurd het gewoon niet	- De gemeente moet goed luisteren naar de behoeftes in de wijk, dus van bottom-up werken, want met vingerwijzen en vanaf 'bovenaf' opleggen gaat nooit werken, wat is er in de wijk nodig, inhaken op de behoeftes -
Social	- Een plek om samen te zijn, connectie tussen mensen, verbinding door activiteiten - Leren wat andere mensen voor je kunnen betekenen, praten over trauma's en gebeurtenissen kan helpen met het verlichten hiervan - Nieuwsgierigheid bij andere die al UA/aan UA gaan doen leidt misschien tot interesse bij nieuwe mensen	- Angst zorgt voor barrieres, maar als je met elkaar in gesprek gaat, kan je de angst overwinnen en samenwerkingen aangaan	Verplaatst naar initiative
Resources	- Een open klaslokaal, waar je kan leren wat de natuur je kan geven	- Er moet geld komen vannuit de overheid --> als een project wordt ingediend, moet er gekeken worden naar, is het reëel, past het, hebben we geld hiervoor, maar als dat zo is dan heb je al een kartrekker en dat zou dus wel moeten werken - Afhankelijk van akkoord op plan van gemeente	- Het voedselbos is nu op prive terrein en dat maakt het relatief 'makkelijk' want mag doen wat je wilt - Verplaatst naar economical
Health	- Kinderen gewend en bekend maken (op school) met gezond eten, nemen ze dat misschien 'mee naar huis' - Gezonde voeding binnenkrijgen - Gelooft dat voeding en buiten zijn een belangrijke rol speelt bij het voorkomen en verhelpen van depressies, overspannen zijn, burn outs, stress verminderen, etc. - Minder in plastic verpakt voedsel (plastic heeft een werking op de voeding) - Wanneer je geinformeerd bent over gezond eten, kun je ook gezondere keuzes maken - Natuur brengt tot rust en is een ontspanningsplek - Groen/bloemen brengen blijdschap, start gesprekken - Fysiek goed voor je, buiten ben je eerder in beweging (bukken, evenwicht, in bomen klimmen) - Goed voor creativiteit	- Als het buiten grauw is, en je voelt je niet goed, soms moeilijker om naar buiten te gaan	- Mentale gezondheid sta ik voor, Bijvoorbeeld, ik geef hier ook trainingen en activiteiten en afgelopen zondag had ik hier een activiteiten. Er kwamen mensen binnen en bij sommigen stond het huilen, nader dan het lachen. Ja en dan zeg ik, laat het er maar gewoon uit, en alles is goed, en die gaan lachend weer naar huis, helemaal vol ontspanning en gewoon door twee uurtjes buiten zijn, en met elkaar bezig te zijn
Initiative	- Behaal met kleine projectjes succes, zodat je het daarna steeds groter kan aanpakken	- Gemeente moet op de hoogte en het eens zijn met een initiatief, want zij zijn de eigenaar van de grond - Je hebt kartrekkers nodig (die het eens zijn met elkaar) - Verhouding tussen initiatiefnemer en gemeente ligt vaak scheef - Je bent afhankelijk van de buurt en wijk coördinatoren, of deze groen als belangrijk zien	- Gemeente moet het initiatief implementeren in de wijk - Mensen uit de wijken enthousiast maken om draagvlak te creëren en dan kan het verder 'rollen' - Eigenaarschap creëren bij buurtbewoners samen met de gemeente zou een goede start zijn - Verplaatst naar economical
Continuity		- Met groen meer laten groeien is goed voor de insecten en het plantgoed, maar de gemeente maait standaard elke week en dat is heel lastig om te veranderen - Wie gaat het onderhouden - Bij wie ligt de verantwoordelijkheid - Als kartrekkers de wijk verlaten, wie neemt het dan over - Er zijn nu wel initiatieven, maar die vallen stil zodra ze zijn aangelegd (op schoolpleinen)	- Als je 'programmas' gaat draaien voor jong en oud, bij nieuwe initiatieven, kan je kennis bijbrengen, en laten zien dat het leuk is, dat het gezond is en dan gaat het rollen --> Er is kennis nodig van wat is wat en wat kan ik er mee
Network			
Environmental	- Groen zorgt voor een betere biodiversiteit, vogels, insecten --> dit gaat plagen tegen zoals processierupsen - Groen is mooi - In de toekomst is er misschien te weinig eten voor de mens extern, dus voeg meer eetbaar groen toe in de steden - Goed voor de luchtkwaliteit, bomen nemen CO2 en andere gifstoffen op uit de lucht	- Het groen meer zijn gang laten gaan is 'rommelig' - Mensen hebben een 'hekel' aan insecten	
Culture			

Figure 24: *Rough analysis of the interview with the participant 3*

D Appendix: Rough analysis

Participant 4

	Driver	Barrier	Other
Economical		- Mensen willen niet het gevoel hebben dat het initiatief van bovenaf wordt opgelegd - Moeilijk om jezelf volledig van voedsel te voorzien	- of het echt economisch heel voordelig is, is de vraag, of je nou echt heel veel kosten bespaart, van boodschappen - Subsidie programma's vannuit de gemeente/provincie Verplaatst naar initiative
Social	- Community vorming, waar je samen dingen doet - Een gezamenlijk doel hebben, kan sociale cohesie bevorderen - Je kan samen dingen koken met wat je hebt gegroeid of uitdelen in de wijk - Leuk om mensen bezig te zien, en dan misschien eens een praatje maken	- Lastig om mensen op te trommelen met gezamenlijke verantwoordelijkheid - Een barrière om je buren te vragen om je planten water te geven als je zelf weg bent - Vernieling, pompoenen uit de schoolmoestuin werden geplukt en kapot gesmeten - Draagvlak vannuit de buurt bewoners (om op te letten) is lastig	- Minder sociaal voordeel in prive tuin, maar nog steeds als je produce gaat uitdelen
Resources	- Het is goed als mensen zich bewust zijn van hoe voedsel groeit, wat je eet, in welke periode groeit wat - De benodigde kennis is vrij makkelijk bij te brengen - Leerzaam als dingen mislukken	- Je kunt nooit helemaal zelfvoorzienend zijn - Het kost tijd om eraan te werken en sommige mensen verkijken zich erop hoeveel tijd het kost en dat je er altijd mee bezig moet zijn - Ruimte zoeken, oppervlakte grond* - Een 'stuk' ontharden* - Goede grond aanvoeren* - Een stuk kennis, mensen denken: ik weet daar niks van, ik heb geen groene vingers - Lang niet iedereen geintresseerd, mensen willen zich er misschien niet mee bezig houden - Mensen ervaren/erkennen de voordelen misschien niet meteen als ze er geen ervaring mee hebben - Cursussen en/of begeleiding nodig voor benodigde skills - Ster* = "misschien niet eens de grootste barriere"	- Prive tuin vergt meer eigen kennis, en je moet er in je eentje voor zorgen - Je kan ook intetariseren bij de bewoners, welke kennis, skills, gereedschappen enz. zijn er al aanwezig en wat is er nog nodig, zijn ze bereid dit te delen/gebruiken - Verplaatst naar Economical - Verplaatst naar Initiative
Health	- Het is leuk om je eigen groentes te groeien - Het is een goede fysieke activiteit - Het is een reden om naar buiten te gaan en in het groen bezig zijn is gezond - Het zorgt voor ontspanning		
Initiative	- Nieuwsgierigheid kan mensen enthousiast maken en stimuleren		- Implementatie moet samen worden gedaan met de bewoners, en er moet draagvlak zijn - Initiatief moet van de mensen zelf komen, dus het proces ernaartoe is heel erg belangrijk, de mensen er echt bij betrekken - De gemeente kan helpen met subsidies voor buurten, die met een eigen initiatief komen - Bottom up implementeren, dan zijn er vast wel mensen die het leuk vinden, maar ook die denken niets voor mij - Activiteiten (oogstfeest, kook middagen) zouden mensen enthousiast kunnen maken
Contieuity		- Wie onderhoudt jou moestuin als jij op vakantie ben - Wie onderhoudt de school moestuin als het zomervakantie is - Als het initiatief niet van de bewoners zelf komt, bloedt het dood - Bewoners moeten zich helemaal 'eigenaar' voelen van het project	- -
Environmental	- Bewustwording over waar hun eten eigenlijk vandaan komt en over alles wat geimporteerd word, en wat voor impact dat heeft - Het kan de openbaren levendiger, mooier en minder versteent maken	- Weinig fruitbomen in openbare ruimtes, want van wie is de opbrengst, dus wordt het niet geplukt en geeft het 'rotzooi'	
Culture	- Turkse gezinnen zijn nog veel bezig met moestuinen en sociale cohesie		- Mensen staan tegenwoordig negatief tegenover boeren, en het zelf proberen zou kunnen laten zien dat het best lastig is maar ook leuk

Figure 25: *Rough analysis of the interview with the participant 4*

D Appendix: Rough analysis

Participant 5

	Driver	Barrier	Other
Economical	- Stadsakkers werd gebruikt om syrische vluchtelingen op te vangen, zodat ze iets te doen hadden overdag - Leveren hun producten aan de voedselbank - Stadsakkers Eindhoven heeft heel veel grote sponsoren (ASML, Rabobank, Fondsen) die allemaal geld geven - Stadsakkers Eindhoven wordt gezien als een goed doel en halen daar veel sponsoring uit - Een goed idee met een goed verhaal kan laagdrempelig geld binnen halen	- Er wordt geen gemeentelijke bijdrage/subsidie geleverd aan stadsakkers Eindhoven - Exploitatie kosten - Hoe groter het initiatief, hoe meer 'werk' het nodig heeft	-
Social	- Mensen uit een sociaal zwakkere buurt, samen op de akkers laten werken (kruidenbuurt) - Een sociaal motief om mensen met elkaar bezig te laten zijn, samen buiten in de grond wroeten - Gezelligheid - Sociale cohesie - Sociale controle kan vandalisme tegen gaan	- De vrijwilligers kwamen juist uit andere buurten - Vandalisme in publieke ruimte --> met quads over de akkers rijden, de keet in brand gestoken en tractor gestolen - Het draagvlak moet groot genoeg zijn om iets op te zetten en de draaglast te overzien	- Zodra het prive moestuinen zijn, dan is het geen sociale activteit meer - Hoe groter de schaal hoe socialer
Resources	- Er is wel interresse in tuinieren (bijvoorbeeld zichtbaar bij de wachtlijst bij de volkstuintjes) - Er zijn veel plekken voor initiatieven (er zijn veel plekken aangeboden aan stadsakkers) - Kundigheid nodig, maar er is heel veel hulp te krijgen	- Je moet ruimte hebben - Kinderen hebben geen kennis over waar hun eten vandaan komt - Mensen hebben weinig kennis uberhaupt over wat ze eten en waar het vandaan komt - Mensen hebben geen interesse in het verbouwen van voedsel - Kundigheid nodig - Open plekken zullen steeds meer verdwijnen --> zal altijd druk op komen toekomstige bebouwing en vandalisme	- De locatie hebben is het belangrijkst, dan gaat het vanzelf rollen - Verplaatst naar Initiative
Health	- Het idealer motief was verse groentes voor de lager inkomende, omdat het gezonder is	- Sommige mensen zijn lichamelijk beperkt en kunnen dit niet doen	
Initiative	- Zodra mensen het zien worden ze enthousiast	- Kartrekkers nodig - Initiatief moet vanaf de wijken zelf komen - Publiciteit helpt, een vaandeldrager, die voor de troepen uit rent, met een bekend gezicht - Het moet een initiatief zijn waarvan draagvlak is om het te gaan doen - De gemeente moet niet vanaf bovenaf dit opleggen	
Continuity		- Initiatieven bloeden dood omdat het moet worden 'overgepakt' en dat wordt niet (altijd) gedaan (gemeentelijk, maar ook op andere schalen - Vergrijzing,	- Bij Eikenburg de regel, wil je hier wonen, dan moet je ook bijdragen aan het landgoed
Network	- Veel 'good will' in Eindhoven - Vrijwilligers zouden vannuit bedrijven kunnen komen die maatschappelijk werk willen doen --> helpt met nieuwschierig maken	- Een goede groep vrijwilligers nodig - Een goed netwerk en goede contacten is essentiaal om de geld pot gevuld te houden - Een netwerk hebben helpt met het opzetten, de jusite mensen vinden etc.	-
Environmental		- Door heftige regenval vertraging	
Culture	- De sociale diversiteit kan helpen met het functioneren van een project en vandalisme tegen gaan		

Figure 26: *Rough analysis of the interview with the participant 5*

D Appendix: Rough analysis

Participant 6

	Driver	Barrier	Other
Economical	- Wanneer gemeente een financierende of faciliterende rol aanneemt kan het door vrijwilligers gesteund worden - Gemeente kan initiatief faciliteren of aanjagen, met grond, bestemmingsplan technisch - Coaching, begeleiding en onderzoek vannuit Wageningen universiteit - Ondersteuning zou ook kunnen komen vannuit woningbouwcorporaties	- Vanaf bovenaf initiëren, zonder initiatiefnemers vannuit de community is gedoemd te mislukken - Initiatief zal nooit van de gemeente komen, en zal het nooit overnemen - Andere problemen zoals luchtkwaliteit, geluid en beweging hebben ook aandacht nodig en hebben meer impact (value per) - Het moet een samenhangend maatregelenpakket zijn, niet alleen los stadslandbouw - Gemeente heeft niet persee ruimte om financiële ondersteuning te bieden - Genoeg andere zorgen in lage-SES buurten zoals stress en armoede - Oplossingen/initiatieven zijn per wijk/buurt weer anders	Allemaal Verplaats naar Resources Verplaatst naar Initiative
Social	- Het werkt het beste als een initiatief een basis heeft van betrokkenheid - Mensen ontmoeten en met elkaar bezig zijn - Kan koppelkansen bieden tussen sociaal en leefbaarheid van plekken - Vrijwilliger, kinderen en schoolklassen kunnen verbonden worden aan het 'voedselbos' met allerlei initiatieven	- Altijd zelfde mensen die het initiatief dragen	
Resources	- Het is sympathiek om in versteende wijkjes ook ploties te maken met moestuintjes - Kennis opdoen van Tuinieren - Er is educatie via scholen, sportverenigingen en welzijnsorganisatie over gezond leven en voeding	- Geen ruimte voor Robuustere initiatieven - In lage-SES wijken puur ruimtelijk gezien minder mogelijkheden - Onwetendheid - Desinteresse	-verplaatst naar initiative
Health	- Actief buiten bezig zijn	- Op deze plekken zij er veel meer zaken die invloed hebben op een gezonde leefbare plek	
Initiative	- Kleine initiatieven heb je de gemeente weinig tot niet nodig		
Continuity		- Ieder initiatief valt of staat bij betrokkenheid & continuiteit - Continuiteit hangt af van de afspraken gemaakt in het begin, samenwerking erg belangrijk	
Network			
Environmental	- Vergroting van de biodiversiteit - In Eindhoven, specifiek in lage-SES wijken, momenteel veel verharding en verstening en weinig toegang tot kwalitatief groen - Vergroening van de stad	-	
Culture		- Dit soort initiatieven ontplooien vaker bij hoger opgeleide mensen - Wat hoor je wel of niet te doen als man of vrouw	

Figure 27: *Rough analysis of the interview with the participant 6*

D Appendix: Rough analysis

Participant 7

	Driver	Barrier	Other
Economical		- Betwijfeld of stadslandbouw initiatieven echt succesvol kunnen zijn - Kan stadslandbouw nou echt bijdragen aan het oplossen van problemen en voedselvoorziening - Mensen hebben veel problemen en andere dingen aan hun hoofd - Mensen hebben niet genoeg geld om de benodigdheden te kopen	
Social	- Samen met buurtbewoners aan de slag zijn en contact hebben - Het kan eenzaamheid tegengaan - Drempel om te tuinieren wordt kleiner als je het met anderen doet	- Je moet iemand in de wijk hebben met de juiste contacten voor het opzetten van een initiatief	Verplaatst naar initiatief
Resources		- Er moet behoefte/wens zijn vannuit de buurtbewoners - Als je een gebrek aan kennis ervaart als drempel - Mensen zien betegelde tuin, als onderhoudsvriendelijke tuin - Kleine tuin moet ook nog andere functies bekleden - Menen zijn onzeker over tuinieren - Het kost veel tijd - Je moet groene vingers hebben - Missende kennis kan leiden tot verspilling	
Health	- Vergroenen leidt tot een gezondere leefomgeving	- Door een fysieke beperking niet in staat	
Initiative			
Continuity	- Traditionele (semi-prive) buurttuinen zijn niets nieuws en zijn bewezen dat ze werken - Het ontwerp van een tuin kan rekening houden met afwezigheid in periodes	- Bestaan van project hangt af van kartrekker - Wanneer kartrekker wegvalt, verpaupert het project - Schoolmoestuinprojecten moeten, vrijwilligers/docenten hebben die het onderhouden en over willen lesgeven - Wie onderhoudt het tijdens vakanties	
Environmental	- Water kan beter de grond in lopen - Hitte Eiland effect tegengaan - Als je alle tuinen in Eindhoven bij elkaar vergroend en bij elkaar optelt heeft het een hele grote impact - Onkruid in een groene tuin lijdt tot minder irritatie	- Trend onder particulieren is om de tuinen te betegelen	
Culture	- Mensen vannuit cultuur of vorige woonplaats gewend om een moestuin te hebben - Mesen hebben vannuit cultuur kennis over tuinieren -	- Mensen zijn het niet meer gewend om je eigen voedsel te verbouwen - Vroeger werd er rekening gehouden in de architectuur van huizen - Het is een trend om tuinen te ontgroenen en verharden	

Figure 28: *Rough analysis of the interview with the participant 7*

D Appendix: Rough analysis

Participant 8

	Driver	Barrier	Other
Economical	- Gemeente kan ondersteunen met de procedures	- Mensen hebben het moeilijk en zien het niet zitten om hier nog aan te werken - Er spelen meer problemen in wijken, dus je bent afhankelijk van een bepaalde prioriteit in welk probleem eerst aangepakt wordt - Soms is er een bepaalde trend die iets 'hot' maakt, nu niet zo - Vannuit de gemeente komt er nu geen financiële steun - Als mensen veel andere problemen aan hun hoofd hebben gebeurd het niet meer	Opmerking 1 en 5 samengevoegd
Social	- Het kan mensen bij elkaar brengen - Mensen kunnen samen iets doen - Geeft mensen iets te doen met nut voor de buurt, en het gevoel dat ze ergens aan bijdragen	- Mensen voelen zich bezwaard als ze niet 'altijd' mee kunnen helpen	
Resources	- Potentie voor SL op (tijdelijk) braakliggende terreinen (vroeger) - Mensen vinden het leuk (hobby) - Kan kinderen iets bijbrengen via school - Bestaande projecten kunnen gebruikt worden om dingen bij te leren - Als er grond is, en je mag doen wat je wilt, is geld niet echt een probleem - Initiatieven met 'bakken' kunnen bijna overal	- Het kan zijn dat er geen ruimte voor is in de openbare ruimte - Het moet iets zijn wat je leuk vind en interesseert - - Hebben mensen genoeg tijd	verplaatst naar initiative
Health	- Het geeft mensen iets te doen		
Initiative		- Initiatief moet vannuit de mensen zelf komen - Mensen weten niet wat er mogelijk is uit eigen initiatief - Je hebt een kartrekker(s) nodig - Afhankelijk van goedkeuring aanvraag door de gemeente - Afhankelijk van wie je wordt begeleid, of het makkelijk of moeilijk gaat	
Continuity		- Het ligt eraan hoeveel tijd mensen erin steken hoe het erbij blijft liggen - Iemand moet het onderhoudt op zich nemen	
Network			
Environmental	- Het kan versteende plekken vergroenen - Het kan hittestress tegengaan - Minder verharding leidt tot betere water opname - Groen ziet er heel prettig uit	- Er zijn periodes in het jaar dat het er hel slordig bij ligt - Op sommige plekken kan het de kwaliteit van de omgeving zoals die er was naar beneden halen - Lage-SES wijken hebben al weinig ruimte voor bijvoorbeeld de auto	
Culture			

Figure 29: *Rough analysis of the interview with the participant 8*

D Appendix: Rough analysis

Participant 9

	Driver	Barrier	Other
Economical	- Eindhoven gaat vergroenen en verduurzamen, huidige wijken gaan op de schop, dat biedt kansen - Geld zou kunnen komen vannuit bewoners/buurtbudgetten	- Het is een soort utopie, het gaat onze voedsel productie niet oplossen - Gemeente moet minder strikt zijn en beheersovereenkomsten afsluiten - Initiatieven zijn te klein om een oplossing te zijn voor de portomonee - Hoe inspireer je mensen hoe kun je deze groep bereiken?	Verplaatst naar Initiative
Social	- Het brengt verbinding - Het versterkt de sociale cohesie - Het kan groepen bij elkaar brengen - Geen sociale barriere		
Resources	- Kan een educatieve rol spelen - Wanneer er intrinsieke interresse is, dan is de kennis voorhanden -	- Niet iedereen vind het interressant - Te weinig tijd - Mensen moeten nieuwsgierig worden gemaakt - Eindhoven kampt met ruimte vraag - Initiatieven zijn te klein	verplaatst naar initiative
Health	- Helpt bij bewust wording over omgaan met voedsel en gezond voedsel kopen - Helpt bij gezond leven en koken		
Initiative	- Gemeente heeft een belangrijke rol in het faciliteren en ondersteunen	- Implementeren zou niet vannuit de gemeente moeten komen	Het is Natuurlijk de vraag of het de rol is van de gemeente om Stadslandbouw te implementeren. volgens mij hebben we als gemeente zeker dit type wijken Natuurlijk een belangrijke rol in het aanjagen van verbinding
Continuity		- Moet de gemeente wel of niet instappen als er minder vrijwilligers zijn --> inspringen eindigt in doodbloeden - Beheer moet onderop liggen bij de buurtbewoners	
Network			
Environmental	- Helpt bij bewustwording van voedsel productie - Ander eetpatroon helpt bij halen klimaatdoelstellingen - Maaiveld parkeerplekken kunnen anders worden ingericht	- Gemeente is verantwoordelijk voor de openbare ruimte en die moet er 'goed' bij liggen	
Culture	-	- Kun je elkaar bereiken - Expats zorgen voor snelle doorstroming	

Figure 30: *Rough analysis of the interview with the participant 9*

D Appendix: Rough analysis

Participant 10

	Driver	Barrier	Other
Economical	Het aangename en het nuttige combineren is altijd leuk	- Te duur om te onderhouden voor laagste klasse - De oogst is spaarzaam en moet onder veel mensen verdeeld worden - De ruimte wordt beheerd door de gemeente en die is vaak huiverig voor het 'loslaten' - Als de gemeente het initieert verpauperd het en willen ze het niet nogmaals faciliteren - Kosten voor gereedschappen kunnen voor kleine initiatieven hoog oplopen - Kijk op de gemeente is niet altijd positief - Er kunnen netwerken worden opgezet, maar die moeten wel gecoördineerd en georganiseerd worden - Gemeente moet tegen een beetje verommeling kunnen - Je moet mensen de waarde laten inzien, laten beseffen dat ze er iets aan hebben - Individualisering bezig waardoor er niet meer echt een collectief is	Samengevoegd Verplaatst naar Social Verplaatst naar Initiative
Social	- Gemeenschapsvorming, verschillende soorten bewoners die meedoen aan dingen - Creëert een gevoel van eigenaarschap - Bevordert sociale cohesie - Samen koken met de geproduceerde producten - Activiteiten organiseren in connectie met de buurttuin - Een kapstok idee, mensen betrekken bij elkaar, door verschillende activiteiten	- Weinig studenten geintresseerd, pas als mensen gesetteld zijn - Vandalisme kan een ding zijn - Mensen moeten een gezamenlijk probleem ervaren voordat de buurt in actie komt - Gezamenlijk probleem inzien in een wijk met geen sociale cohesie is moeilijk	
Resources	- Trainingen worden al gegeven om kennis op te doen of kunnen makkelijk opgezet worden - Mensen die het leuk vinden, vinden het niet erg om kennis bij te spijkeren - Het educatieve aspect, je eigen ontwikkeling verbreden - Mensen kunnen elkaar dingen leren en dat weer verspreiden/zelf gebruiken	- Is er genoeg ruimte - Gereedschappen nodig - Van wie zijn de gereedschappen en waar berg je ze op - Er zijn bepaalde 'trucjes' en kennis nodig - Iemand met kennis van zaken nodig, die een stuk begeleiding doet, en die mensen ook meetrekt - Het netjes houden kost veel werk -	
Health	- Het is leuk om mee te doen - Je bent actiever bezig, je kan even je benen strekken - Gepensioneerde kunnen gestimuleerd worden - Hele dag achter computer bezig, fijn om s'avonds iets fysieks te doen met mensen samen		
Initiative	- Provincie stimuleert school moestuinen en vergroenen - Mensen vinden het fijn als ze worden 'meegenomen' - Project matig aanpakken werkt goed - Mensen met kinderen eerder geneigd om dit te doen, in combinatie met school	- Trekkers nodig die het belangrijk vinden - Gemeente of wijkcoordinator kunnen het niet initieren maar wel faciliteren - Sommige mensen weten niet dat je zoiets kan/mag initieren - Er moet een duidelijke plek komen waar je met de juiste mensen wordt verbonden - In sociaal zwakkere wijken worden dit soort initiativen vaak niet opgepakt	
Continuity	- Wanneer een initiatief in de buurt is ga je er sneller heen\ - Als mensen trots zijn en verantwoordelijkheidsgevoel hebben zullen ze er geen rotzooi van maken	- Er voor zorgen dat mensen betrokken blijven en verantwoordelijk zijn - Veel werk van publiekelijke initiatieven valt in de vakanties	
Environmental	- Biodiversiteit neemt toe	- Het is een seizoensgebonden activiteit	
Culture	- Tweede en derde generatie medelanders zijn opgegroeid met het willen telen - Het verbouwen van groentes die bekender zijn in andere culturen kan mensen triggeren	- Moeilijk om verschillende culturen met elkaar te integreren - Tuinieren kan worden gezien als een activiteit die lagere sociale klassen deden in andere culturen	

Figure 31: *Rough analysis of the interview with the participant 10*

E Appendix: Semi-structured interview guide

Datum:
Locatie:
Functie:

Voor de start informed consent form laten ondertekenen.

Introductie:
Stedelijke landbouw is voor mij het integreren van, het groeien en verbouwen van diverse gewassen in de stedelijke omgeving, op kleine en grote schaal, ten gunste van de persoonlijke fysieke en mentale gezondheid, het milieu en gemeenschapsontwikkeling. Uit literatuur blijkt dat stedelijke landbouw een tal aan voordelen biedt. Dit maakt dat er in dit onderzoek wordt gezocht naar de voordelen en barrières die de implementatie en betrokkenheid bij stedelijke landbouw beïnvloeden, door middel van een interview. Deze informatie zal worden verwerkt in beleids- en interventievoorstellen, die gebruikmaken van de voordelen en helpen de barrières te overwinnen.

De focus in deze studie ligt op kleinschalige stedelijke landbouw, vooral in buurten met een lage socio-economische status (low-SES). Dit om de groottebeperking van potentiële ruimtes die veel voorkomen in deze buurten, te verminderen. Buurten met een lage socio-economische status worden getypeerd, door buurten waar de inwoners bijvoorbeeld laag scoren op welvaart (inkomen), beroep en onderwijsniveau.

Tijdsmanagement
Voor het interview staat ongeveer 45 minuten gepland, ik probeer de tijd in de gaten op mijn opnames en als het nodig is zal ik aangeven dat we door moeten gaan naar de volgende vraag.

Notities
Tijdens het interview zal ik korte aantekeningen maken, dit betekend niet dat het ene antwoord belangrijker is dan het andere antwoord, maar dan vergeet ik het niet als ik over iets wil doorvragen in een latere vraag.

1. Wat weet u over stadslandbouw? (state-of-the-art kennis)
2. Heeft u ervaring met stadslandbouw, en zo ja kunt u deze ervaring omschrijven
3. Wat is uw mening over stadslandbouw
   (a) Positief, negatief, neutraal en waarom?

Implementatie en betrokkenheid/participatie
Bij veel vragen wordt er eerst naar de implementatie gevraagd en dan naar de betrokkenheid. Het verschil hier is als volgt: de implementatie gaat echt om het aanleggen van de plekken waar stadslandbouw wordt gedaan zowel prive, semi prive en publiekelijk en de betrokkenheid gaat om het onderhouden en gebruiken op lange termijn van deze plekken.

4. Kent u barrieres voor het implementeren van stadslandbouw, specifiek voor lage-SES buurten? (of kunt u deze verzinnen?)

   (a) Kent u barrieres die betrokkenheid/participatie bij stadslandbouw tegengaan? (of kunt u deze verzinnen?)

5. Kent u drijfveren (drijvende krachten) voor het implementeren van stadslandbouw, specifiek voor lage-SES buurten (of kunt u deze verzinnen?)

   (a) Kent u drijfveren (drijvende krachten) die betrokkenheid/participatie bij stadslandbouw zouden stimuleren? (of kunt u deze verzinnen?)

6. In de vraag hiervoor geeft u aan meerdere drijfveren (drijvende krachten) te kennen/kunnen bedenken, waarom denkt u dat stadslandbouw dan nu nog niet geimplementeerd is in lage-SES buurten?

7. Stadslandbouw kan je op verschillende soorten plekken implementeren: Prive - eigen voor/achter tuin of balkon Semi-prive - in een gemeenschappelijke tuin/binnenplaats/hofje Publiekelijk - toegankelijk voor iedereen

   (a) Wat zijn de verschillen in barrieres per soort plek?

   (b) Wat zijn de verschillen in drijfveren per soort plek (drijvende factoren)?

8. Als stadslandbouw prive, semi-prive, publiekelijk is geimplementeerd, welke verschillen ziet u (verwacht u) bij de betrokkenheid/participatie van stadslandbouw?

9. Wat is uw gevoel tegenover de implementatie van Stadslandbouw, specifiek in lage-SES buurten ? Heeft u er een positief of negatief gevoel bij? Wegen de kosten en de baten tegen elkaar op? (Kosten en baten hoeven niet alleen over geld te gaan, kan ook bijv. tijd en moeite zijn)

   (a) Wat is uw gevoel tegenover de betrokkenheid/participatie bij Stadlandbouw, specifiek in lage-SES buurten?

10. Stel U wil stadslandbouw implementeren met uw organisatie in een lage-SES buurt, wat denkt u dat uw collega's hier van vinden?

    (a) Stel stadslandbouw wordt geimplementeerd in een lage-SES buurt, wat zullen de inwoners hier van vinden?

    (b) Denk u dat betrokkenheid/participatie van de bewoners van lage-SES buurten bij stadslandbouw wordt geaccepteerd door de buurtbewoners?

11. Welke middelen zijn nodig om stadslandbouw te kunnen implementeren in lage-SES buurten? (Skills, tijd, geld, plek, educatie, kennis, wetten, financiering, etc.)

    (a) Welke middelen zijn er al aanwezig voor het implementeren van stadlandbouw in lage-SES buurten?

    (b) Denkt u dat u (of uw organisatie) over genoeg fysieke middelen en kennis beschikt om Stadslandbouw te implementeren? Waarom wel of niet? Denkt u dat de inwoners van lage-SES buurten over genoeg middelen beschikken om zelf stadslandbouw te implementeren?

    (c) Stel stadslandbouw is geimplementeerd in een lage-SES buurt, denkt u dat de gebruikers over genoeg fysieke middelen en kennis beschikken om deze te onderhouden/te gebruiken? Waarom wel of niet?

12. Denkt u dat er nog andere achtergrond factoren zijn van de inwoners van lage-SES buurten die invloed hebben op het implementeren van stadslandbouw? (Socio demographics, eigenschappen, waarden, normen, etc.)
    (a) Denkt u dat er nog andere achtergrond factoren zijn bij (uw/andere) organisaties die invloed hebben op de implementatie van stadslandbouw?
    (b) Denkt u dat er nog andere achtergrond factoren zijn die invloed hebben op de betrokkenheid/participatie bij stadslandbouw hebben?
13. Heeft u nog andere opmerkingen/toevoegingen?
14. Wilt u de resultaten ontvangen?

Voorbeelden van voordelen/drijfveren
Verminderd uitstoot van transport van eten
Verminderde hoeveelheid verpakkingsmatriaal
Meer groen in de stad - verminder urban heat island effect - verbeterde water wegloop/retentie
Goede fysieke activiteit
Gezond voedsel met hoge kwaliteit en geen pesticide
Verminderd stress
Verbeterde sociale contacten
Vrijetijds besteding
Mooier maken van buurten
Meer kennis over een gezonde levensstijl
Goedkoper/geld besparend

F Appendix: Consent form explorative interviews

Toestemmingsformulier onderzoek volwassene

Door dit formulier te ondertekenen verklaar ik:

1. Ik heb voldoende informatie over het onderzoeksproject uit het losse informatieblad gehaald. Ik heb het informatieblad gelezen en heb daarna de kans gehad om vragen te stellen. De vragen zijn naar tevredenheid beantwoord.

2. Ik neem vrijwillig deel aan dit onderzoeksproject. Er is geen expliciete of impliciete druk voor mij om deel te nemen aan dit onderzoeksproject. Ik begrijp dat ik op elk moment kan stoppen met deelname, zonder uit te moeten leggen waarom en ik hoef geen vragen te beantwoorden die ik niet wil beantwoorden.

3. Ik weet dat mijn persoonsgegevens worden verzameld en gebruikt voor het onderzoeksproject, zoals is uitgelegd in bijgevoegd informatieblad.

Daarnaast geef ik toestemming voor de volgende onderdelen van het onderzoek:

4. Ik geef toestemming om mijn antwoorden te gebruiken voor quotes in de onderzoek publicaties – zonder dat daarbij mijn naam wordt gepubliceerd.

   JA ☐ NEE ☐

Naam Deelnemer:	Naam Onderzoeker:
Handtekening:	Handtekening:
Datum:	Datum:

G Appendix: Definition list concepts and Themes

Table 23: *Definition list concepts and themes, part 1*

Concept	Theme	Definition
Economical		Statements which focus on the supply, limitations and distribution of financial resources, the cooperation and contact with institutions, understanding of the value of UA, and the potential contribution of UA on alleviating existing issues in low-SES neighborhoods on UA.
	Institutional Governance	Statements focused on the structure, decision making, and mechanism of, or contact with public institutions
	Community Impact	Statements focused on the influence of UA on the overarching economic issues of communities
	Value perception	Statements focused on the subjective assessment of individuals or groups on the significance, importance, or worth of UA
	Financial consideration	Statements focused on the evaluation and assessment of financial factors related to UA
	Operation and Logistics	Statements focused on the planning, coordination and management of individuals or groups related to UA
Social		Statements which focus on the interactions, relationships, challenges and cohesion among a neighborhood or group of people in the context of UA projects.
	Social Cohesion	Statements focused on the connectedness, solidarity, the sense of belonging, within a community, resulting from participating in UA.
	Activities	Statements focused on organized actions or events related to, or connected with UA initiatives
	Ambiance	Statements focused on the overall atmosphere which UA gives in neighborhoods
	Vandalism	Statements focused on the deliberate destruction or damaging of property and the social norms related to this
Resources		Statements which focus on all tangible and intangible assets of UA including, capabilities, skills, knowledge, time, and physical tools and space, excluding money.
	Physical space	Statements focused on the availability, suitability, accessibility and utilization of land or area for UA initiatives
	Knowledge	Statements focused on the needed skills, information, and understanding and the acquisition through learning, experience or education to participate with UA
	Guidance	Statements focused on the advice and support aimed to assist individuals or groups with UA
	Time	Statements focused on the allocation and availability of time for UA
	Tools	Statements focused on the physical resources needed to perform UA, other than space, e.g. seeds and soil.

G Appendix: Definition list concepts and Themes

Table 24: *Definition list concepts and themes, part 2*

Concept	Theme	Definition
Health		Statements which focus on the overall physical and mental well-being of individuals and communities participating in UA and influence of UA on health
	Physical activity	Statements focussed on the impact of UA on engagement in, and ability of movement of individuals
	Awareness (Hlth)	Statements focussed on being conscious of, or informed by the impact of UA, related to food production and health
	Relaxation	Statements focussed on the process of becoming calm, and feeling and ease
	Fun	Statements focussed on enjoyment or happiness caused by UA
	Nutrition	Statements focussed on healthy eating and being conscious about food
Initiative		Statements which focus on the effort which should be undertaken by individuals, groups or institutions or combination of these, to start a UA project
	Institutional Initiative dynamics	Statements focussed on how institutions (municipalities, companies, government) should and could contribute in facilitating UA initiatives, or on how citizens would like them to be involved
	Motivation	Statements focused on why people do or do not want to start a UA project
	Volunteers	Statements focused on who should and could contribute to starting a UA project
Continuity		Statements which focus on the sustaining of engagement which includes presence, involvement, commitment of, and maintenance by individuals, groups or institutions in UA projects over time
	Communal Resilience and Engagement	Statements focussed on the keeping or losing of engagement of individuals or groups within the neighborhoods
	Responsibility	Statements focussed on who should maintain, and is the liable individual or group of the UA initiatives
Environment		Statements which focus on the impact of UA on the surroundings and ecosystems within the urban areas.
	Biodiversity	Statements focussed on the variety and variability of living organisms, ecological complexes and landscape related to UA
	Awareness (Env)	Statements focussed on the conscious realization or understanding of the impact of UA on the Environment
	Greening	Statements focussed on the process of adding or increasing vegetation, particularly in urban areas by UA initiatives
	Beautification	Statements focussed on the (change of) appearance of neighborhoods by adding UA initiatives
	Disruptions	Statements focussed on environmental interruptions or disturbance which influence the smooth functioning of UA initiatives
Culture		Statements which focus on the cultural factor of UA initiatives

H Appendix: Brainstorm co-creation session

This appendix shows the results of the brainstorm for the co-creation session. Each result contains an activity name, a description of the activity, pros and cons, and a visualization.

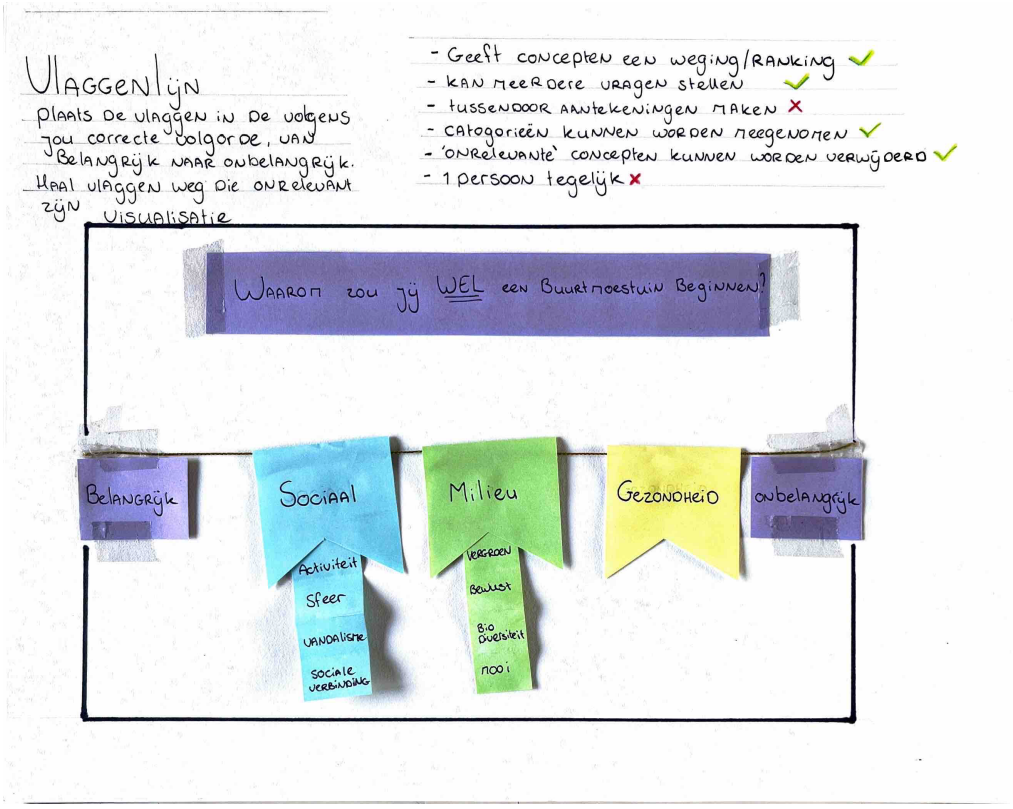


Figure 32: *Brainstorm result, flag-line activity*

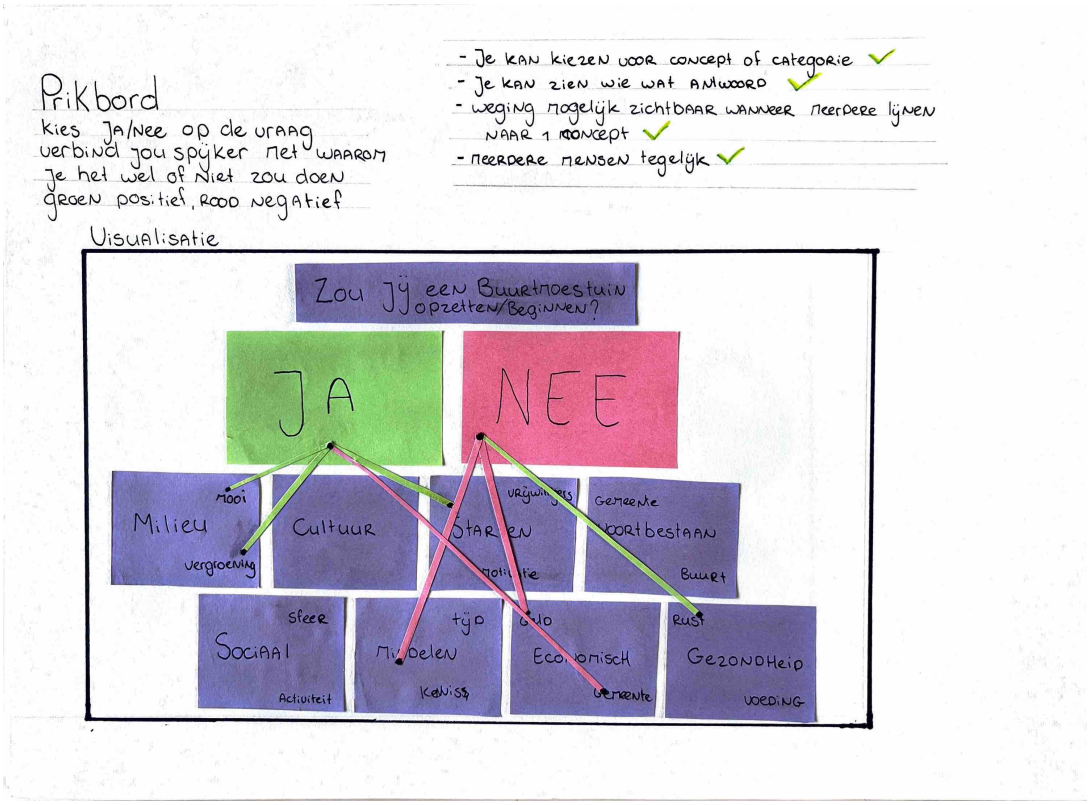


Figure 33: *Brainstorm result, bulletin board activity*

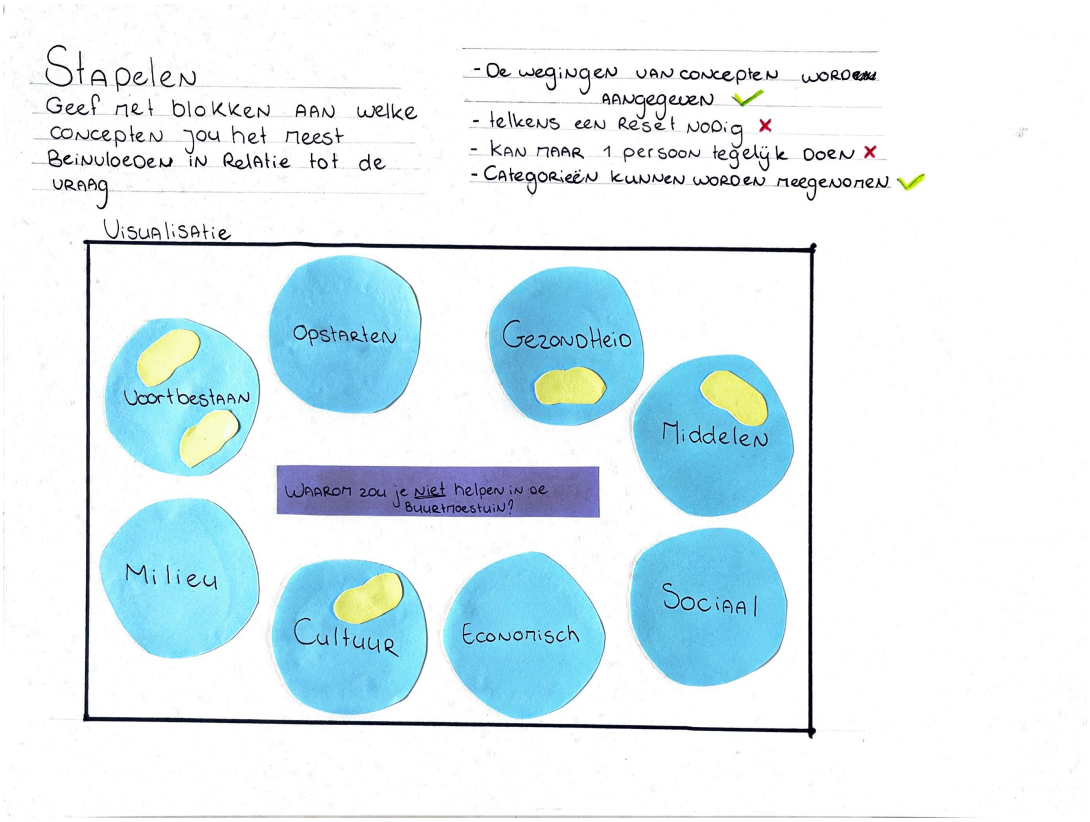


Figure 34: *Brainstorm result, stacking activity*

I Appendix: Guiding sheets

Uitleg vlaggenlijn activiteit

Doel:

1. Hang de 8 vlaggen met woorden aan de lijn
2. Met de volgorde van de vlaggen geef jij antwoord op de vraag
3. Hang je de vlag aan de Linkerkant van de lijn ← Dan vind je het woord minder belangrijk
4. Hang je de vlag aan de Rechterkant van de lijn → Dan vind je het woord meer belangrijk
5. Vind je een (of meer) van de vlaggen niet bij de vraag passen, dan hoef je hem niet op te hangen

Voorbeeld:

Meer uitleg nodig bij de woorden, kijk dan hieronder:

GEZONDHEID

Dingen die hier ook bij horen:
Bewegen
Ontspannen
Waar is het goed voor
Voeding
Plezier

SOCIAAL

Dingen die hier ook bij horen:
Activiteiten
Sfeer in de buurt
Express kapot maken
Sociale verbinding

MILIEU

Dingen die hier ook bij horen:
Groener maken
Mooier maken
Veel verschillende planten en dieren
Bewust zijn van het effect
Slecht weer, ongedierte

BLIJVEN BESTAAN

Dingen die hier ook bij horen:
Vaste ondersteuning en betrokkenheid van de gemeente
Vaste ondersteuning en betrokkenheid van de buurt
Verantwoordelijkheid

WAT JE NODIG HEBT

Dingen die hier ook bij horen:
Ruimte
Kennis
Begeleidig
Tijd
Gereedschap

EERSTE STAP ZETTEN

Dingen die hier ook bij horen:
Vrijwilligers
Zin hebben in, motivatie
Eerste stap vannuit de gemeente

GELDZAKEN & ORGANISATIE

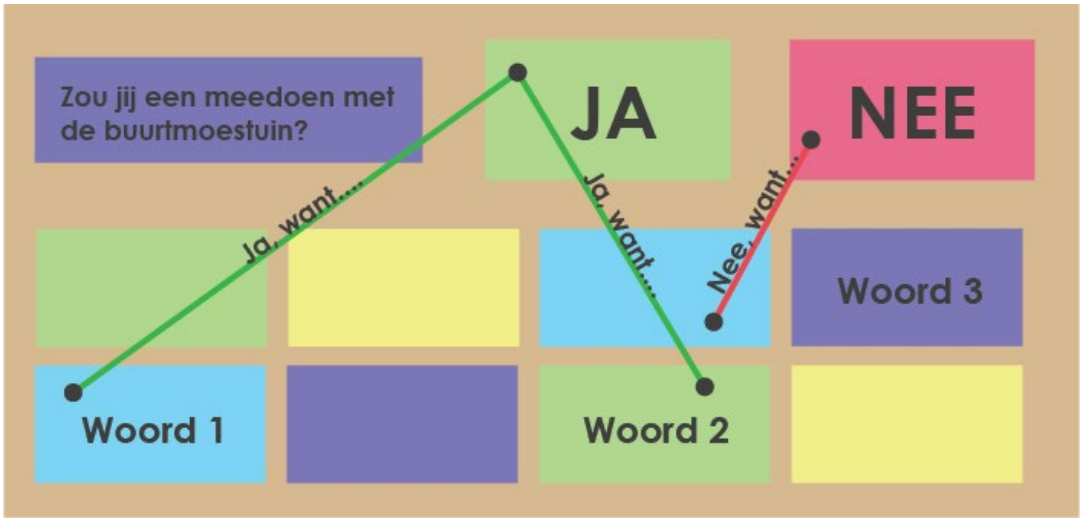
Dingen die hier ook bij horen:
Geldzaken
Planning en organisatie
Zien dat dit waarde heeft
Het beter worden van de buurt
De gemeente regelt dingen
Je kan het meten

Uitleg Prikbord activiteit

Doel:

1. Beantwoord de vraag boven aan het bord
2. Dit doe je door jouw spijker in ja of nee te slaan
3. Kies 1 of meerdere woorden uit van het bord die invloed hebben op waarom jij ja of nee hebt gekozen
4. Sla een spijker in dit woord
5. Verbind jouw spijkers met touwtjes
    a. Een groen touw betekent: Ja, want....
    b. Een rood touw betekent: Nee, want....

Voorbeeld:



Meer uitleg nodig bij de woorden, kijk dan hieronder:

GEZONDHEID

Dingen die hier ook bij horen:
Bewegen
Ontspannen
Waar is het goed voor
Voeding
Plezier

SOCIAAL

Dingen die hier ook bij horen:
Activiteiten
Sfeer in de buurt
Express kapot maken
Sociale verbinding

MILIEU

Dingen die hier ook bij horen:
Groener maken
Mooier maken
Veel verschillende planten en dieren
Bewust zijn van het effect
Slecht weer, ongedierte

BLIJVEN BESTAAN

Dingen die hier ook bij horen:
Vaste ondersteuning en betrokkenheid van de gemeente
Vaste ondersteuning en betrokkenheid van de buurt
Verantwoordelijkheid

WAT JE NODIG HEBT

Dingen die hier ook bij horen:
Ruimte
Kennis
Begeleidig
Tijd
Gereedschap

EERSTE STAP ZETTEN

Dingen die hier ook bij horen:
Vrijwilligers
Zin hebben in, motivatie
Eerste stap vannuit de gemeente

GELDZAKEN & ORGANISATIE

Dingen die hier ook bij horen:
Geldzaken
Planning en organisatie
Zien dat dit waarde heeft
Het beter worden van de buurt
De gemeente regelt dingen
Je kan het meten

Uitleg Mini interview-activiteit

Stappenplan:

6. Spreek iemand aan of je een vraag mag stellen
7. Vraag of diegene er oke mee is om opgenomen te worden met een dictafoon
8. Laat diegene het consent form ondertekenen (zodat informatie en quotes gebruikt mogen worden)
    a. Als iemand er naar vraagt is er een informatieblad over het consent en onderzoek aanwezig die doorgelezen kan worden
9. Zet dictafoon aan
10. Stel een paar vragen
11. Bedank voor het meedoen

Vragen:

1. Heeft u ervaring met Buurtmoestuin?
2. Wat vindt u van Buurtmoestuin?
3. Wat houdt u tegen om te beginnen met Buurtmoestuin, in uw buurt?
4. Waarom zou u wel beginnen met een Buurtmoestuin?
5. Waarom zou u wel meedoen met een Buurtmoestuin?
6. Wat houdt u tegen om mee te doen met een Buurtmoestuin?
7. Wat mist u om te beginnen met een Buurtmoestuin?
8. Wie zou er volgens u moeten beginnen met een Buurtmoestuin?
9. Wie zou er volgens u een Buurtmoestuin moeten onderhouden?
10. Heeft u hulp nodig bij het opzetten van een Buurtmoestuin? En zo ja, hoe ziet deze hulp eruit?

Onderzoek naar buurtmoestuinen, wat houdt mensen tegen en waarom willen mensen het wel?

Dit is een onderzoek vannuit de **Technische Universiteit Eindhoven**

Door: **Hilde Heemskerk**

Voor haar afstudeer project doet zij onderzoek naar het volgende:

Uit onderzoek is gebleken dat **buurtmoestuinen veel voordelen bieden** aan mensen, buurten en het milieu. Een paar van deze voordelen zijn, meer beweging, meer sociale contacten, meer verschillende planten en dieren in de buurt en meer bewust zijn van het effect wat gezonde voeding voor jou kan betekenen.

Deze voordelen zijn al bekend en bewezen, maar toch heb je niet overal in Eindhoven buurtmoestuinen. In dit onderzoek wordt er daarom gezocht naar **wat mensen tegenhoudt om een buurtmoestuin te beginnen of wat ze tegenhoudt met een buurtmoestuin mee te doen.** Daarnaast wordt er gezocht naar redenen **waarom mensen wel een buurtmoestuin willen beginnen of waarom mensen willen meehelpen in een buurtmoestuin.**

Voor **vragen** kun je ons altijd aanspreken of contact opnemen met:
h.h.m.heemskerk@student.tue.nl

Uw mening is hierin heel belangrijk!

Wilt u meedoen?

Activiteiten:

Iedereen van **18+** mag meedoen
We hebben **GEEN persoonlijke informatie** nodig, u blijft **anoniem**!
Voor de **kinderen** is er een woordzoeker aanwezig

De vlaggenlijn:

Tijd: maximaal 5 minuutjes
Hier kan ik het meeste informatie uit halen!

De prikborden

Tijd: maximaal 1 minuutje
Dit zou mij erg helpen

Mini interview:

Tijd: Zolang u wilt!
Dit zou een grote toevoeging zijn aan mijn onderzoek

Groente Woordzoeker

D	J	S	I	I	M	B	C	Q	S	W	Q	T	Q	Q	M	L	S
I	C	Y	P	T	K	T	P	G	Q	R	X	L	C	S	P	T	I
Q	F	N	F	K	N	Q	W	W	P	F	E	D	T	W	B	N	K
Y	S	J	Z	I	P	N	V	H	C	N	Q	S	H	F	T	U	V
F	E	I	Z	P	J	O	A	G	F	P	O	H	V	O	Y	M	Q
G	Z	R	Q	Q	K	V	E	C	V	T	P	E	D	W	R	N	X
D	F	A	Z	K	Y	Q	U	L	E	L	N	X	O	Z	B	Y	J
O	M	M	F	O	L	T	I	W	I	K	Z	R	N	F	Q	C	O
N	Z	E	V	C	R	Y	L	G	E	I	T	H	A	I	C	O	M
X	U	Z	B	T	D	J	L	L	W	E	S	B	L	G	Q	G	N
A	K	O	Q	N	R	X	L	I	L	J	S	A	S	Y	Y	F	S
F	G	R	F	Q	F	N	N	S	R	E	X	S	E	S	L	P	J
G	X	C	M	G	I	X	B	V	Z	Q	W	I	N	O	L	Z	W
K	V	S	L	A	T	C	V	U	L	M	E	L	I	J	X	B	W
X	B	W	L	O	O	K	M	E	O	L	B	I	A	S	C	F	Q
I	D	T	K	L	P	N	N	D	V	E	F	C	M	Y	I	O	R
T	J	T	N	U	B	M	F	K	U	G	G	U	O	X	N	U	S
S	U	M	K	W	I	E	R	P	F	X	Q	M	R	E	F	F	P

Het spel:

1. Zoek naar de groentes in de bakken
2. Welke groentes zie je?
3. Zoek de naam van de groente in de Woordzoeker puzzel
4. Streep het woord door als je hem gevonden hebt!
5. Heb je alle 10 de groentes gevonden?
6. Dan is de puzzel klaar!